DAELIM

SERVICE MANUAL

INTRODUCTION

This manual describe effective maintenance procedure for Delfino manufactured by DAELIM Motor co., Ltd.

This manual was made with the goal of being easy to use and includes drawing with reference numbers and a detailed explanation of the relative area or part of concern for this purpose.

The lst chapter includes general maintenance information of this manual.
The 2nd chapter is involved with the explanation of inspection and maintenance of the parts particular to this vehicle for the maintaining of safety and optimal function of each of the parts.

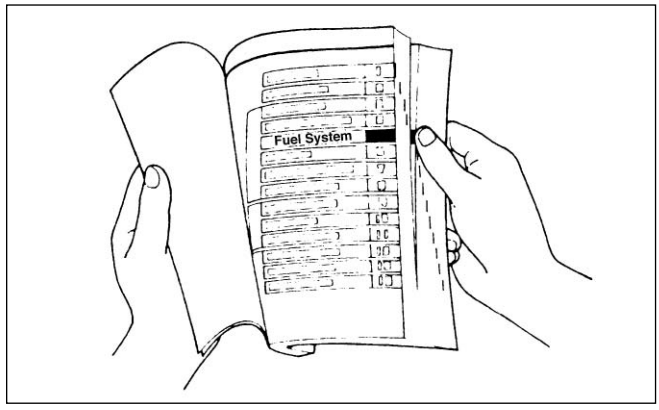
Starting with the 3rd chapter, this service manual groups its chapters into that of the engine, frame, and electrical parts, giving a detailed explanation of the maintenance of parts concerned under these groupings.

- It is possible for certain of this service manual to be erroneous as a result of changes and improvements made in the vehicle. We ask that you understand if discrepancies are found in this manual.

- This manual is intended to be used by those having basic technical knowledge of Delfino maintenance. It is asked for the persons lacking in the knowledge and experience to utilize this manual when performing maintenance and to ensure any questions you might have to these authorized maintenance centers.

CONTENTS

HOW TO USE THIS MANUAL



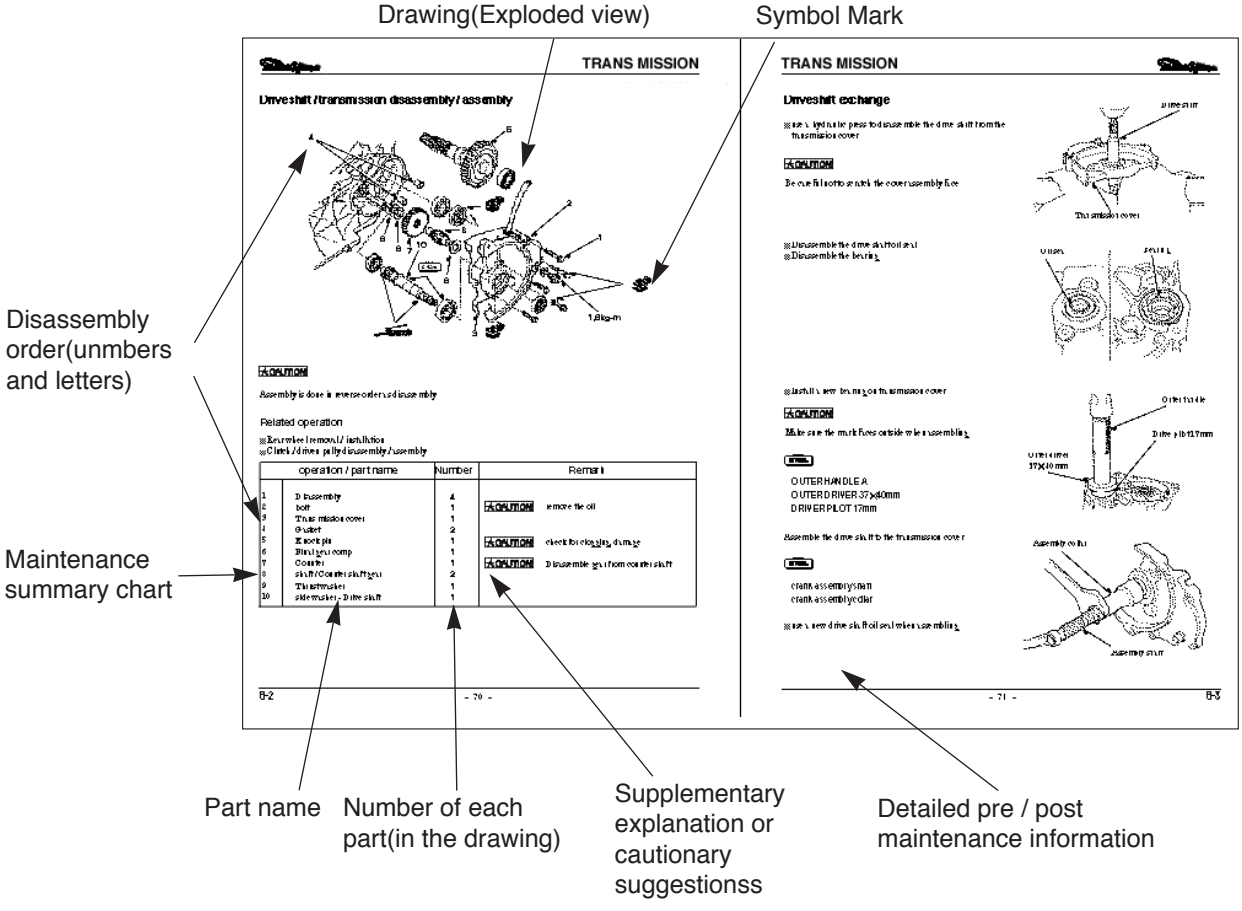
Finding correct location in manual

- This manual is divided into chapters of the inspection and maintenance of different areas of the vehicle. When you want to find a certain chapter, first go to the Contents section on the first page and after finding the desired chapter, simply flip through the pages until reaching the desired marker corresponding with that on the Contents page. Also, found on the first page of each chapter is a list of what is included in that chapter; and cautionary notes and a malfunction diagnosis are added in the beginning of each chapter. Please read these carefully before starting any maintenance work.

Unders tanding information and explantions given in manual

- Exploded diagrams of the main parts are offered in their respective chapters for the easy assembling and disassembling of parts.
- Numbers or letters are found in the drawings indicating the order of disassembly.

- Symbol marks are included in the drawings to allow for the easy recognition of precautions and necessary steps to be taken when working on the vehicle. Please refer to the following page for a complete explanation of the symbol marks.
- A maintenance summary chart is also provided. This chart lists all the parts that appear in the graph and their numbers, as well as cautions.
- Supplementary explanations are provided when extra information, not provided for in the drawings, is needed or when a more detailed explanation is required.



SYMBOLS

The following symbols appear in this manual and offer cautionary suggestions which need to be heeded when performing maintenance work on the vehicle.

Symbol	Caution	Symbol	Caution
⚠ Caution	Indicates special caution needed. Possibility of resulting in serious malfunctioning of vehicle if ignored.	⚠ Caution	Indicates an important step or operation. Possibility of resulting in minor malfunctioning or damage to part if ignored.
		CAUTION	Indicates general caution. Caution needed to be taken when performing the maintenance operation or in the handling of part.

The following symbols indicate needed lubrication, the changing of parts, and required specialized tools, etc. When performing maintenance.

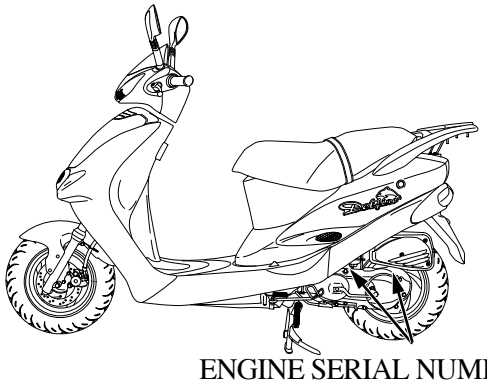
Symbol	Caution	Symbol	Caution
OIL	Indicates needed application of oil. When a designated brand is not listed, use the designated or suggested engine oil when this symbol appears.	SEAL	Indicates needed application of a sealant.
MO OIL	Indicates needed application of a molybdenum solution. The molybdenum solution is made by mixing molybdenum grease with engine oil at a 1:1 ratio.	NEW	Indicates new part needed every time when disassembled.
GREASE	Indicates needed application of a multi purpose grease. (NLG 1#2 using a lithium soap base) Example brand: Shell Albania EP-2 (Fire-Proof Shell Oil)	BRAKE FLUID	Indicates brake fluid needed. Use recommended DOT3 or DOT4 brake fluid.
M	Indicates needed application of molybdenum grease.(containing over 3% of emulsified molybdenum, NCG 1#2)	Cushion Oil 추천오일	Use recommended cushion oil.
MP	Indicates needed application of molybdenum paste. (containing over 40% of emulsified molybdenum, NLG 1#2)	S TOOL	Use Specialized Tool.
S	Indicates needed application of silicon grease.	OP TOOL	Use Option Tool. These tools are needed for the part, see part list for tool number.
LOCK	Indicates needed application of an anti-lock substance. When a designated brand is not listed, use a medium-strength brand.	(⇨ 3 - 1)	Indicates reference page. This particular symbol indicates chapter 3 page 1.

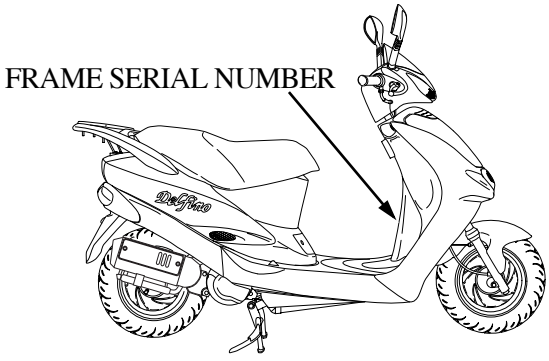
Special greases, etc. that do not correspond to the above are indicated without using symbols.

MEMO

1. MAINTENANCE INFORMATION

SERIAL NUMBER LOCATION





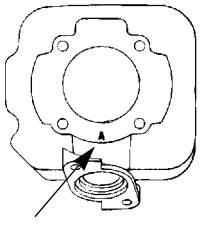
SPECIFICATIONS

VEHICLE TYPE		Delfino	TRAIL	86mm
LENGTH		1,810mm	FRAME TYPE	Under bone
WIDTH		720mm	MIN REVOLUTION RADIUS	1.9m
HEIGHT		1,130mm	COOLING TYPE	Air cooling
WHEEL BASE		1,290mm	STARTING SYSTEM	Kick & Starter motor
DISPLACEMENT		99.7cc	MOTOR TYPE	2Cycle
FUEL TYPE		Unleaded gasoline	No. OF CYLINDER / MOUNTING	1Cylinder / Transverse
DRY WEIGHT	FRONT	34kgf	VALVE APPARATUS	Read Valve, Piston Valve Combination
	REAR	56kgf	BORE × STROKE	50.6 × 49.6mm
	TOTAL	90kgf	COMPRESSION RATIO	6.7
SEATING CAPACITY		2person	MAX. TORQUE	9.2N·m /4,500rpm
GROSS WEIGHT	FRONT	67kgf	PRIMARYSPEED REDUCTION RATIO	3.000
	REAR	153kgf	SECONDARY SPEED REDUCTION RATIO	3.142
	TOTAL	220kgf	TRANSMISSION	V-belt auto matic
GROUND CLEARANCE		110mm	TRANSMISSION RATIO 1ST GEAR	2.300~0.800
CASTER		28°	FUEL CONSUMPTION	41km(60km/h)

MAINTENANCE SPECIFICATIONS

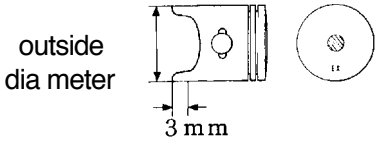
ITEM		STANDARD	SERVICE LIMITS
Lubrication			
Engine oil capacity		1.2 ℓ	
Recommended engine oil		2cycle oil, DMC ultra 2 super oil	
Transmission oil	Full capacity	0.12 ℓ	
	After oil change	0.11 ℓ	
Recommended transmission oil		API service classification : SE, SF,SH grade Viscosity : SAE 80W/90	
Lubrication type		Separate oil system	
Oil pump type		Current filtration Plunger type	
Cooling system		Air-cooled	
Cooling type			

ITEM	STANDARD	SERVICE LIMITS
Fuel system		
Fuel capacity	7.2 ℓ (Reserve capacity 1.9 ℓ)	
Air cleaner type	Wet sump	
Carburetor type	PB110	
Identification mark	PB110 1	
Venturi Diameter	16.0mm	
Air screw opening	1 1/8	
Float level	8.00mm	
Idle speed	1,800 ±100rpm	
No. of jet needles	2nd	
Main jet	#88	
Slow jet	#38	
Throttle grip free play	2 - 6mm	
Cylinder, Cylinder, piston		
Cylinder head Compression pressure	10.5kg/㎠-600rpm	
Cylinder	Top of Cylinder	
bending	--	0.10mm
Inside diameter ID mark(B)	50.600-50.605mm	50.65mm
Inside diameter ID mark(A)	50.605-50.610mm	50.65mm
Inside diameter ID mark(No)	50.610-50.615mm	50.65mm
Cylindrical degree	--	0.10mm
Out of roundness	--	0.10mm
Piston		
Outside diameter ID mark(B)	50.565-50.569mm	
Outside diameter ID mark(A)	50.570-50.574mm	
Outside diameter ID mark(No)	50.575-50.579mm	
Cylinder and piston spacing	0.035-0.045mm	0.10mm
Piston pin hole inside diameter	14.002-14.008mm	14.03mm
Piston pin outside diameter	13.994-14.000mm	13.98mm
Piston and Piston pin spacing	0.002-0.012mm	0.03mm
Piston ring seam spacing Top	0.15-0.35mm	0.60mm
Second	0.15-0.35mm	0.40mm
Carving in ring	Turning up	
Connecting rod small and portion diameter	18.005-18.017	18.03mm

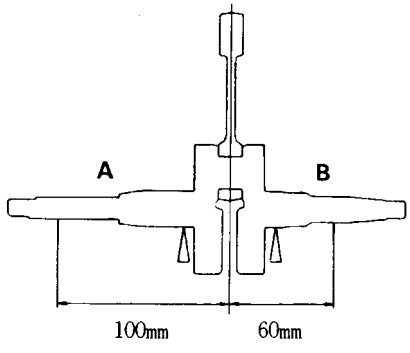


ID mark location

Outside diameter measurement location



ITEM			STANDARD	SERVICE LIMITS
Port timing	IN.	Open	Auto Control	
		Close	Auto Control	
	Ex	Open	82.5° BBDC	
		Close	82.5° ABDC	
	Scavenging	Open	58° BBDC	
		Close	58° ABDC	
Clutch				
Clutch	Automatic		Automatic Centrifugal	
	Type		Gearless shifting	
	Clutch outer diameter		112.0-112.2mm	112.5mm
	Clutch lining thickness		3.5mm	2.0mm
Drive belt	Width		17.5mm	16.5mm
Moveable drive face				
	Bush inside diameter		24.011-24.052mm	24.60mm
	Boss outside diameter		23.960-23.974mm	23.94mm
	Weight roller outside diameter		15.92-16.08mm	15.40mm
Driven pulley	Face spring free extension		145.5mm	137.5mm
	Face outside diameter		33.965-33.985mm	33.94mm
	Moveable face inside diameter		34.000-34.025mm	34.060mm
Crankshaft, Transmission				
Crankshaft				
Big end side clearance			--	0.80mm
Connecting rod Radial clearance			--	0.04mm
Crank shaft runout		A	--	0.15mm(A)
		B	--	0.10mm(B)



ITEM			STANDARD	SERVICE LIMITS
Front, Rear Wheel				
Wheel	Rim runout	Radial	--	2.0mm
		Axial	--	2.0mm
	Axle runout		--	0.2mm
Tire	Tire pressure	Front	1.50kgf/㎠	
		Rear(2 Person)	2.25kgf/㎠	
		(1 Person)	1.75kgf/㎠	
	Tire size		100/90-10 56J	
Suspension				
Front cushion free length			273.1mm	--
Rear cushion free length			249.7mm	
Brake				
Front brake	Brake fluid		DOT3 or DOT4	
	Brake pad thickness		4.8mm	To wear line
	Disk thickness		3.5mm	3.0mm
	Disk runout		--	0.3mm
	Master cylinder inside diameter		11.000-11.043mm	11.055mm
	Master piston outside diameter		10.957-10.984mm	10.945mm
	Caliper cylinder inside diameter		30.230-30.280mm	30.29mm
	Caliper piston outside diameter		30.148-30.198mm	30.14mm
Rear brake	Free play		10-20mm	--
	Brake drum inside diameter		110mm	111mm
	Brake lining thickness		4.0mm	2.0mm

ITEM	STANDARD	SERVICE LIMITS
Ignition System		
Ignition type	CDI	
Spark plug Standard	BR8HS	
Plug gap	0.6-0.7mm	
Ignition timing "F" mark	BTDC 17°/1,800rpm	
Ignition coil		
Resistance values(20℃)		
Initial coil	0.1-0.3 Ω	
Secondary coil(plug cap sticking)	7.5-8.6 Ω	
Secondary coil(No plug cap)	2.7-3.5 Ω	
Pulse generator Resistance values(20℃)	50-200 Ω	
Charging System, AC generator		
AC generator type	AC	
Out put	12V-5.5A	
Charging coil resistance value(20℃)	0.3-1.2 Ω	
Lamp coil resistance value(20℃)	0.1-1.0 Ω	
Regulator / Rectifier		
Type	Single phase halfwave SCR charging	
Control pressure Lamp	12.0-14.0V/5,000rpm	
Charging	13.0-15.0V/5,000rpm	
Resistor value Resistor (6.7 Ω 5W)	6.3-7.1 Ω	
Resistor (5.9 Ω 30W)	5.6-6.2 Ω	
Light, Switch, meter		
Light, Bulb Head light	12V-35/35W × 1	
Stop light	12V-21W	
Winker light	12V-10W × 4	
Speedometer Lamp	12V-1.7W × 2	
Winker pilot Lamp	12V-3W × 2	
High beam pilot Lamp	12V-3W	
Position Lamp	12V-5W × 2	
Fuse	7A	
Battery		
Capacity	12V-3Ah(MF Battery)	
Terminal voltage	13.0-13.2(20℃)	
Charging current/standard	0.4A/5h	
Charging time/Rapid	4A/0.5h	

TWIST TORQUE

STANDARD TWIST TORQUE

TYPE	TWIST TORQUE	TYPE	TWIST TORQUE
6mm Bolt, Nut	0.5kg-m	5mm Screw	0.4kg-m
6mm Bolt, Nut	1.0kg-m	6mm Screw, SH Bolt	0.9kg-m
8mm Bolt, Nut	2.2kg-m	6mm Flange Bolt, Nut	1.2kg-m
10mm Bolt, Nut	3.5kg-m	8mm Flange Bolt, Nut	2.7kg-m
12mm Bolt, Nut	5.5kg-m	10mm Flange Bolt, Nut	4.0kg-m

* Bolts not appearing in the following table are tightened using standard torque.

ENGINE PARTS

TWIST PART	NUMBER	SCREW DIAMETER(mm)	TWIST TORQUE	REMARK
Fly wheel nut	1	10	4.0kg-m	
Drive face nut	1	10	4.0kg-m	
Cylinder head bolt	4	6	1.0kg-m	
Spark plug	1	14	1.4kg-m	
Moveable drive face bolt	3	4	0.45kg-m	
Driven face nut	1	28	5.5kg-m	
Clutch outer nut	1	10	4.0kg-m	
Oil level check bolt	1	10	1.8kg-m	
Carburetor mount bolt	2	6	1.0kg-m	
Inlet pipe bolt	4	8	1.0kg-m	
Mission cover special bolt	8	10	1.4kg-m	
Cooling fan bolt	2	6	1.0kg-m	

FRAME PARTS

TWIST PART	NUMBER	SCREW DIAMETER(mm)	TWIST TORQUE	REMARK
Handle twist bolt	1	10	4.4kgf-m	
Steering stem lock nut	1	24.4	6.9kgf-m	
Top cone race	1	25.4	7.4kgf-m	Tighten lightly and rotate about $\frac{1}{8}$ back wards
Front axle nut	1	12	5.9kgf-m	
Rear axle nut	1	16	11.9kgf-m	
Brake disk bolt	3	8	3.9kgf-m	
Caliper bleeder valve	1	8	0.6kgf-m	
Caliper mount bolt	2	8	2.8kgf-m	
Caliper pad pin	2	8	1.8kgf-m	
Caliper slide pin bolt	1	10	2.3kgf-m	
Brake hose bolt	2	10	3.4kgf-m	
Rear brake arm bolt	1	6	0.6kgf-m	
Steering stem bolt(FR. Fork)	4	10	3.0~4.0kgf-m	
Rear cushion upper bolt	1	10	4.0kgf-m	
Rear cushion lower bolt	1	8	2.5kgf-m	
Rear damper lock nut	1	8	2.0kgf-m	
Engine hanger bracket nut	1	10	7.1kgf-m	
Oil pump cable Stay bolt	2	5	0.8kgf-m	
Engine mount	1	10	4.0kgf-m	
Muffler joint nut	2	8	3.2kgf-m	

SPECIAL TOOLS

TOOL NAME	USAGE	CHAPTER
OUTER HANDLE A	Assembly bearing	7
SOCKET WRENCH 39 × 41mm CLUTCH SPRING COMPRESSOR	Disassembly/Assembly of clutch/ driven pulley	
BEARING DRIVER	Insert driven face ball bearing	
CASE PULLER	Disassembly starter driven gear	
UNIVERSAL HOLDER	Disassembly clutch outer lock nut	
	Disassembly drive face lock nut	
OUTER DRIVER 24 × 26mm	Insert driven face needle bearing	
OUTER HANDLE A	Assembly bearing	8
OUTER DRIVER 32 × 35mm	Change drive shaft(case) / final shaft(cover) bearing	
OUTER DRIVER 37 × 40mm	Change drive shaft(cover) / final shaft(case) bearing	
DRIVER PILOT 17mm	Change drive shaft(cover) bearing Assembly driven face needle bearing	
DRIVER PILOT 15mm	Change final shaft(case) bearing	
DRIVER PILOT 12mm	Change drive shaft(case) bearing	
CRANK ASSEMBLY SHAFT CRANK ASSEMBLY COLLAR	Assembly drive shaft	
CASE PULLER	Remove crank shaft	9
CASE PULLER	Disassembly crank case	
UNIVERSAL BEARING PULLER SHAFT PROTECTOR	Remove crank shaft bearing	
OUTER DRIVER 52 × 55mm DRIVER PILOT 20mm	Change crank shaft bearing	
ASSEMBLY COLLAR CRANK ASSEMBLY SHAFT	Assembly L. crank shaft oil seal	
CRANK ASSEMBLY SHAFT CRANK ASSEMBLY COLLAR	Assembly crank shaft / R. crank shaft oil seal, Assembly crank case	
OUTER HANDLE A	Change crank shaft bearing	
LOCK NUT WRENCH A	Disassembly top come race	10
LOCK NUT WRENCH B	Disassembly top come race	
BALL RACE REMOVER	Remove upper ball race	
CUSHION COMPRESSOR ATTACHMENT	Disassembly front cushion	
CUSHION COMPRESSOR -COMPRESSOR SCREW ASS'Y CUSHION COMPRESSOR ATTACHMENT	Disassembly rear cushion	11
UNIVERSAL HOLDER	Disassembly fly wheel	13
FLY WHEEL PULLER	Remove fly wheel	

LUBRICATION OIL

ENGINE PARTS

APPLICATION AREAS	OIL TYPE	CAUTIONARY SUGGESTIONS
Connecting rod big end, rotatory part of crank Case, operation part, connecting rod small end Part needle bearing, rotatory part of cylinder, Operation part, rotatory piston pin, piston pin hole operation part	2cycle oil, DMC ultra 2 super oil	
Transmission(Final drive gear)	**API service classification : SE,SF,SH grade Viscosity : SAE 80W-90**	
Crank shaft bearing operation part Crank shaft oil seal edges Mission oil seal edges Starter drive gear operation part oil pump O-ring Drive shaft bearing operation part Kick driven gear, friction spring operation part Bearing, Kick spindle bearing part		
Engine hanger bush operation part		Capacity : 0.5g
Moveable drive face, Weight roller operation part		Capacity : 10-15g ※ Do not apply to drive belt operation face.
Driven face inside diameter part		
Oil pump drive gear	Molybdenum grease	

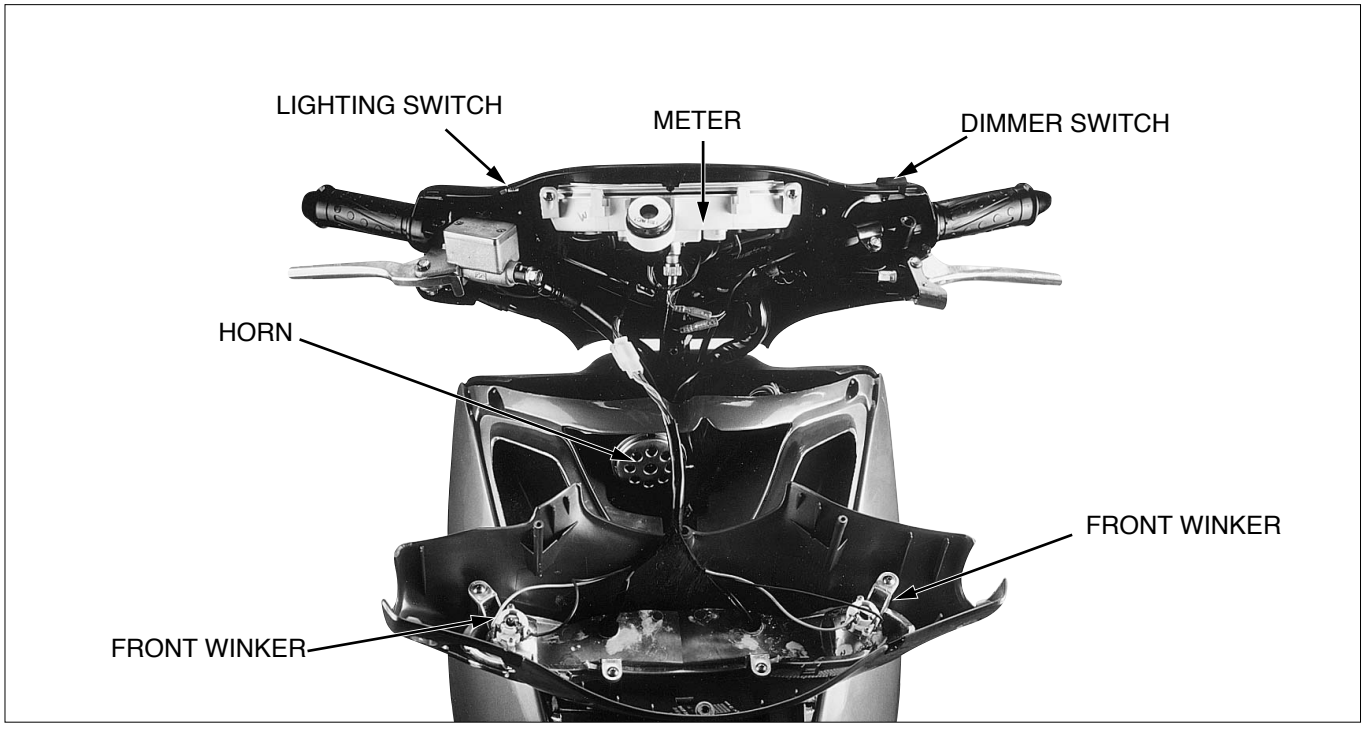
FRAME PARTS

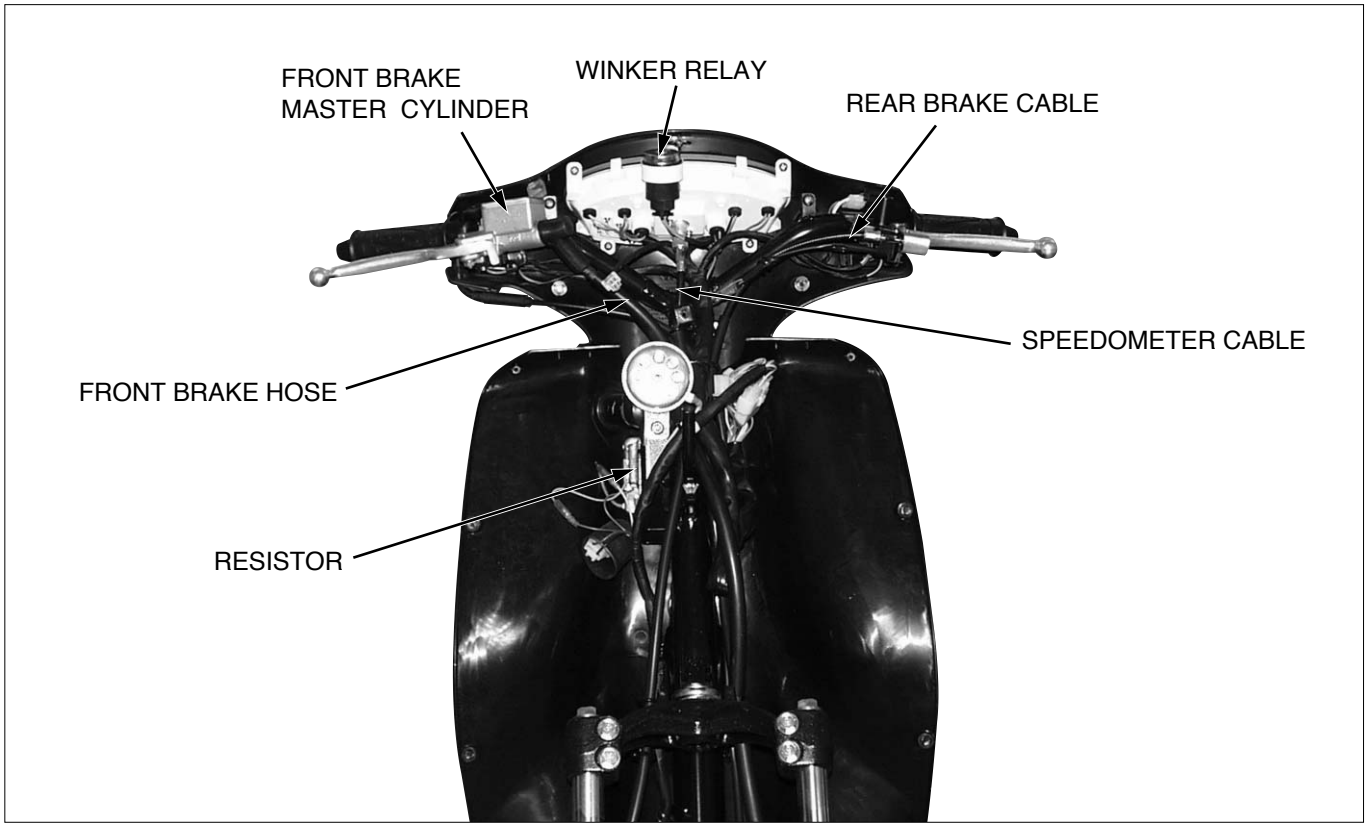
APPLICATION AREAS	OIL TYPE	CAUTIONARY SUGGESTIONS
Front wheel dust seal edges Front pivot arm bush contact part Front pivot arm seal edges Rear brake, cam shaft, cam part, Brake anchor pin shaft part		
Caliper piston seal edges Master cylinder inside and operation part Throttle cable stay bolt		0.1cc 0.5cc
Oil pump cable stay bolt Caliper pin bolt screw part Rear damper lock nut screw part		
Rear brake cam dust seal Rear brake cable		

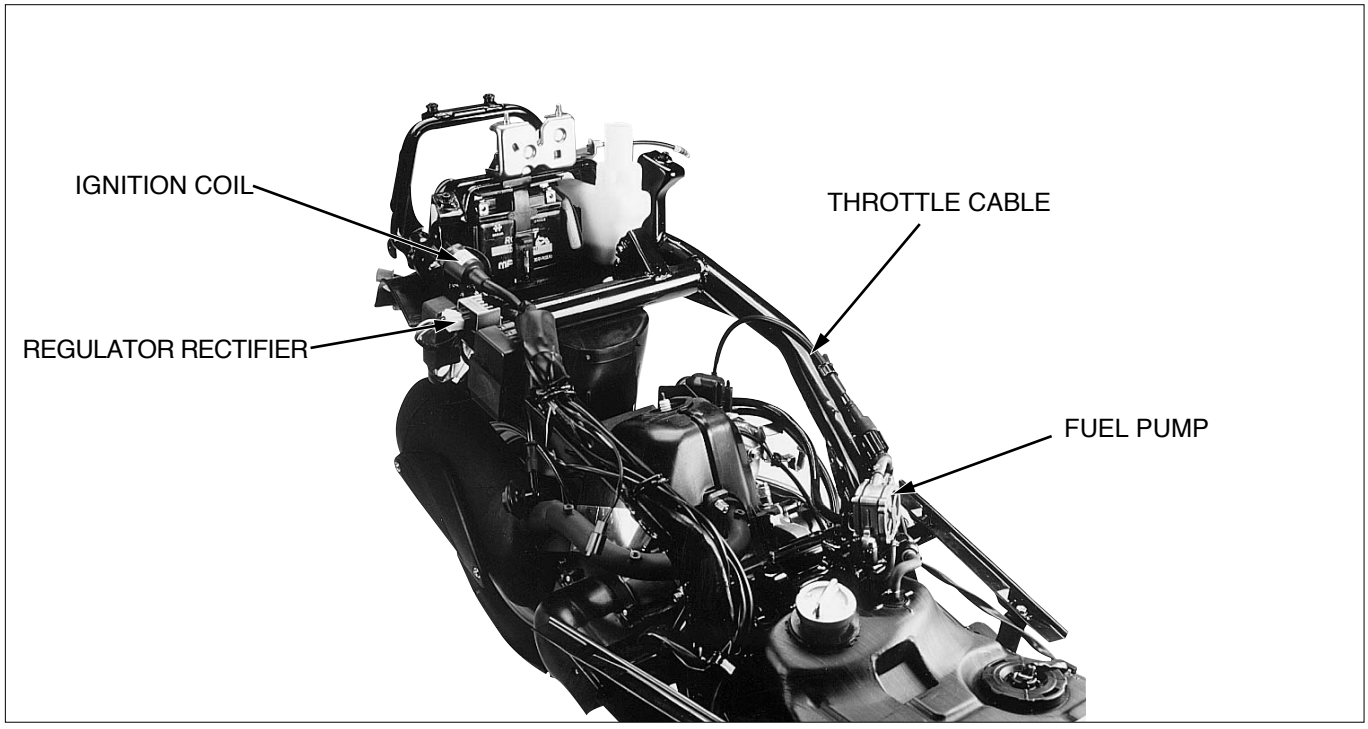
FRAME PARTS

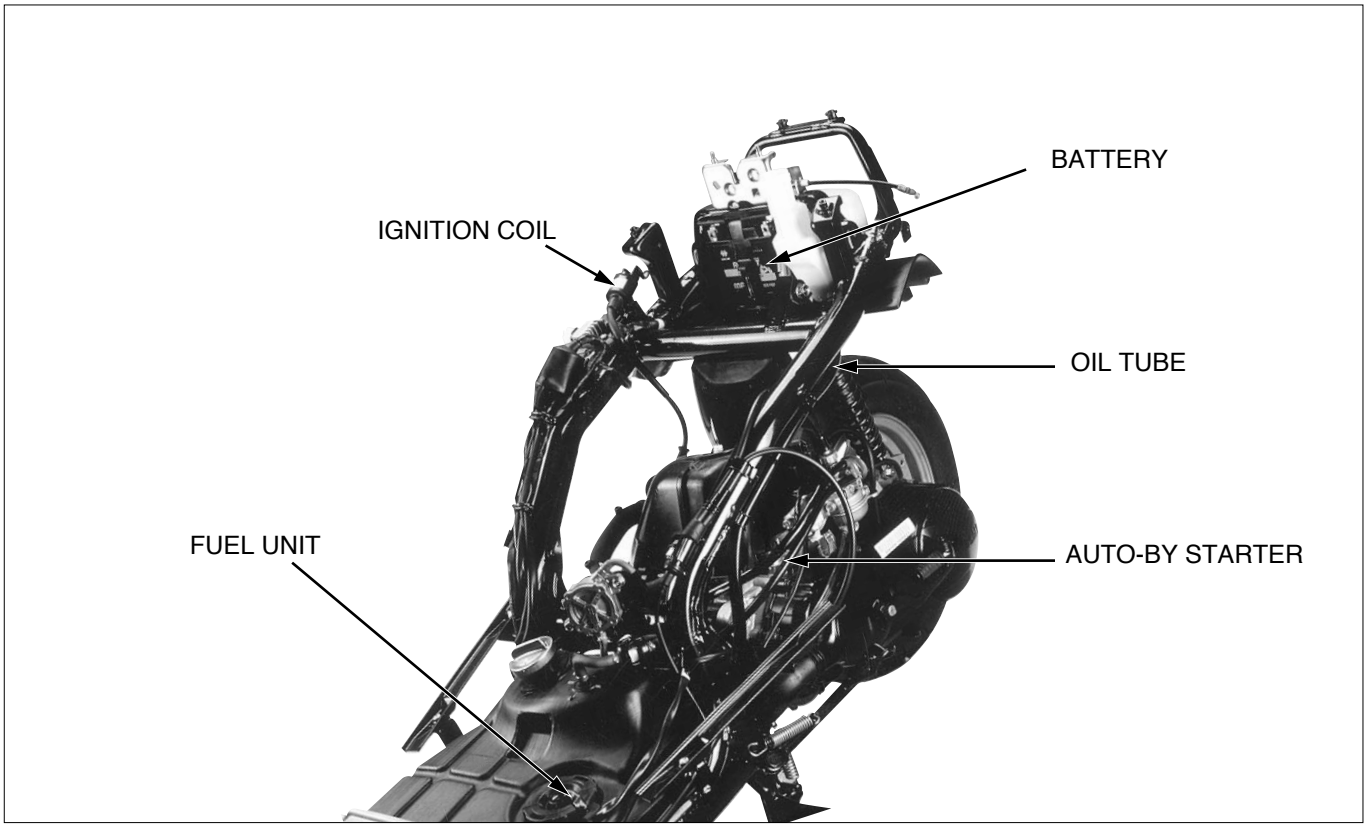
APPLICATION AREAS	OIL TYPE	CAUTIONARY SUGGESTIONS
Top cone race operation part Bottom cone race operation part Upper ball race operation part Lower ball race operation part Speedometer, gear, screw, Inside diameter Speedometer pinion axle, screw part Speedometer gear box seal, edges Speedometer cable, inner cable face Main stand axle part Seat lock axle part FR. brake lever master cylinder assembly part FR. brake lever bolt, lever operation part		
L. handle grip lever, grip inner diameter R. handle grip lever, grip inner diameter	Bond	
Air cleaner connecting tube Case assembly part	Bond	
Air cleaner element	4cycle oil	
Oil tank, tank inside	2cycle oil	

WIRING DIAGRAM





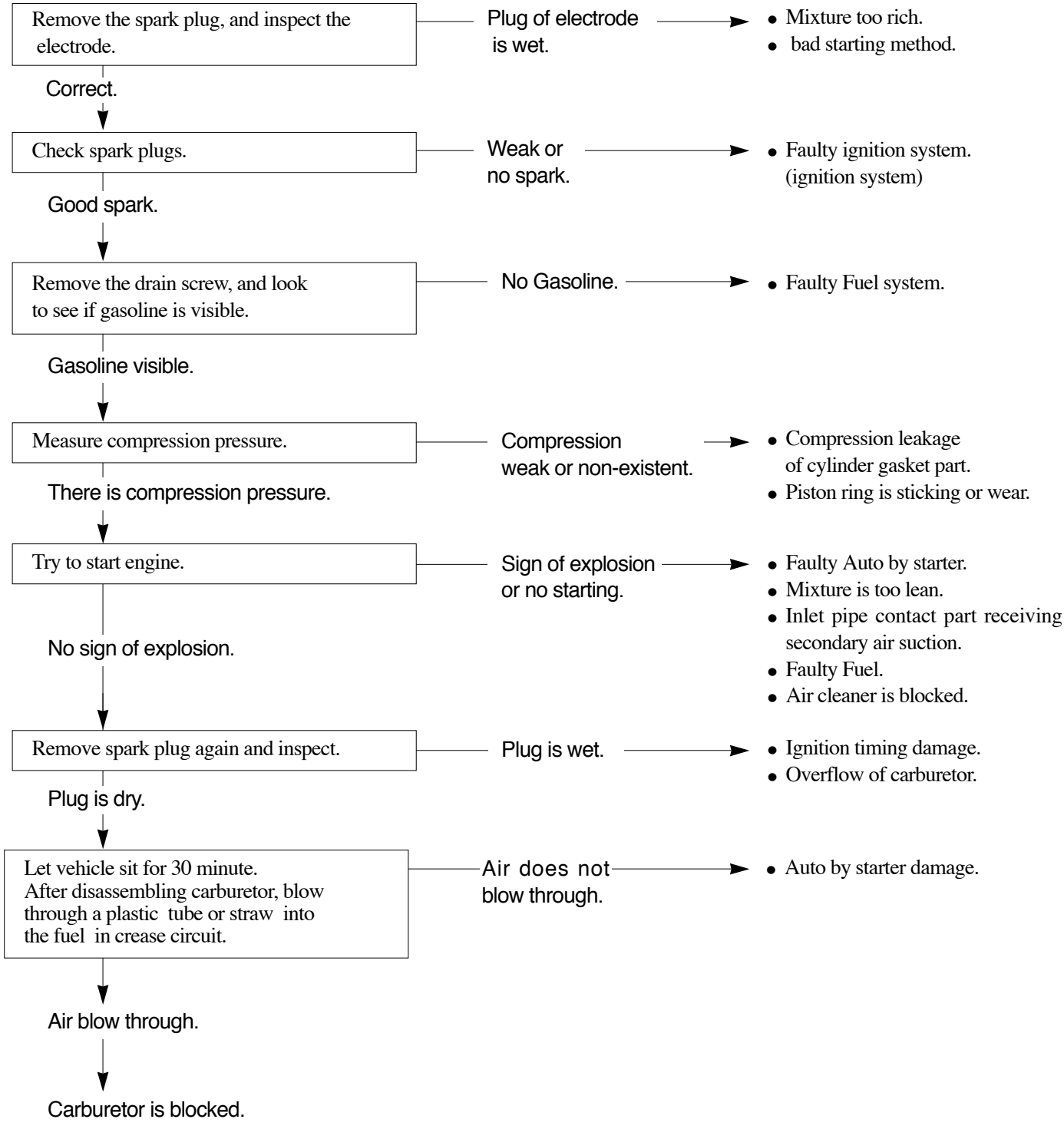

IGNITION COIL
REGULATOR RECTIFIER
THROTTLE CABLE
FUEL PUMP


BATTERY
IGNITION COIL
OIL TUBE
FUEL UNIT
AUTO-BY STARTER

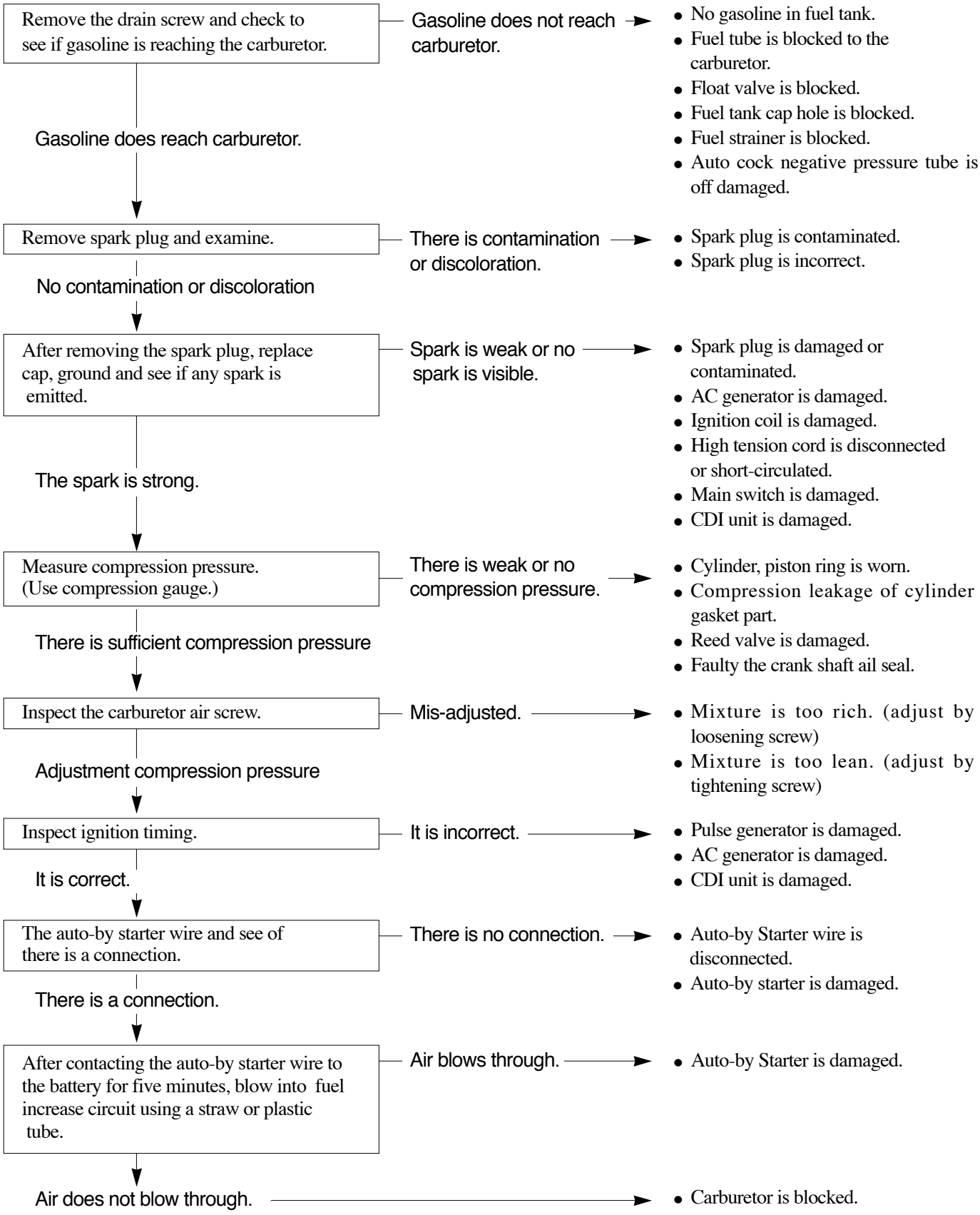
TROUBLESHOOTING

The following is an explanation of diagnosis of the principal malfunctions that can occur in the engine.

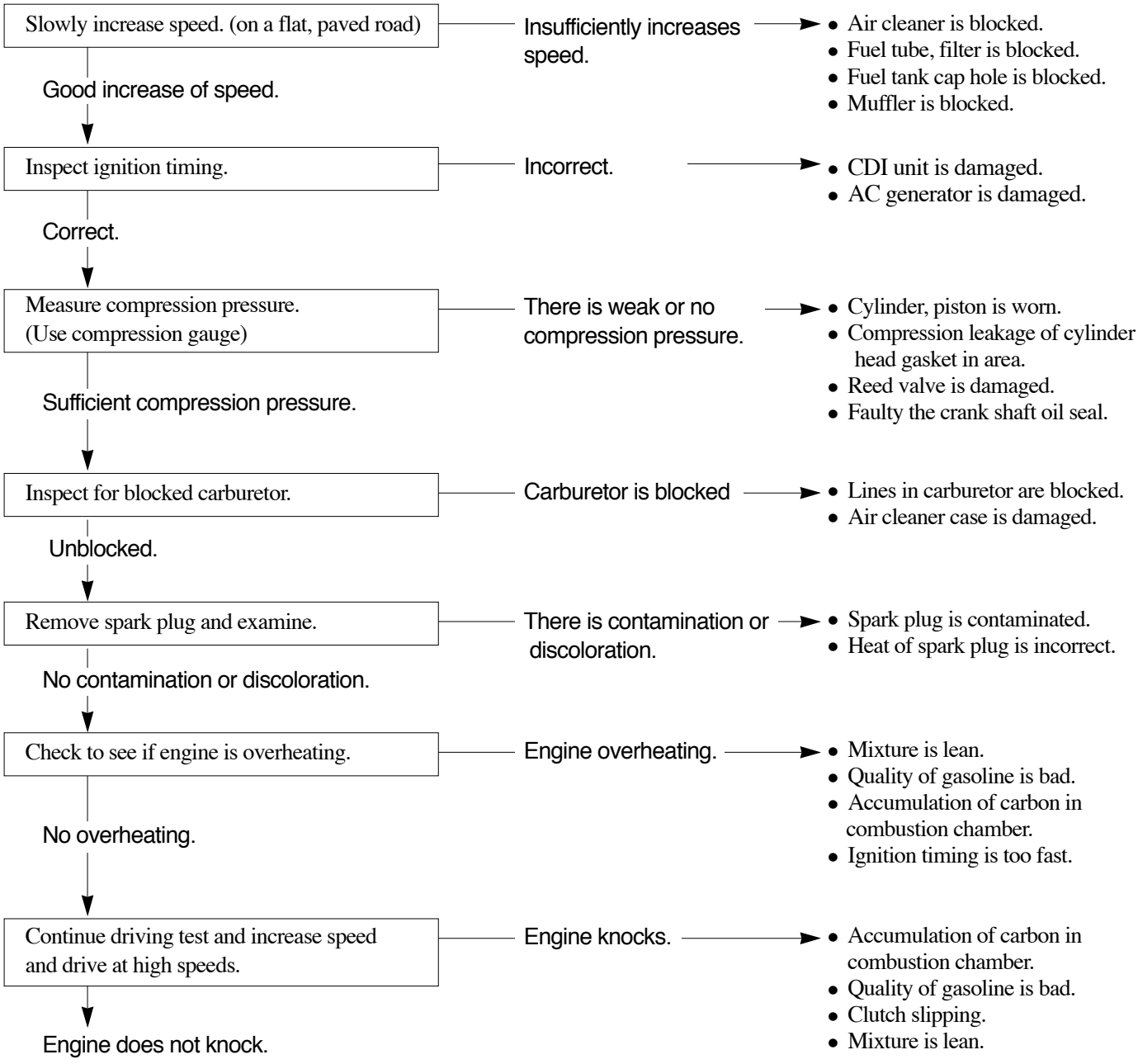
Not starting or difficulty starting



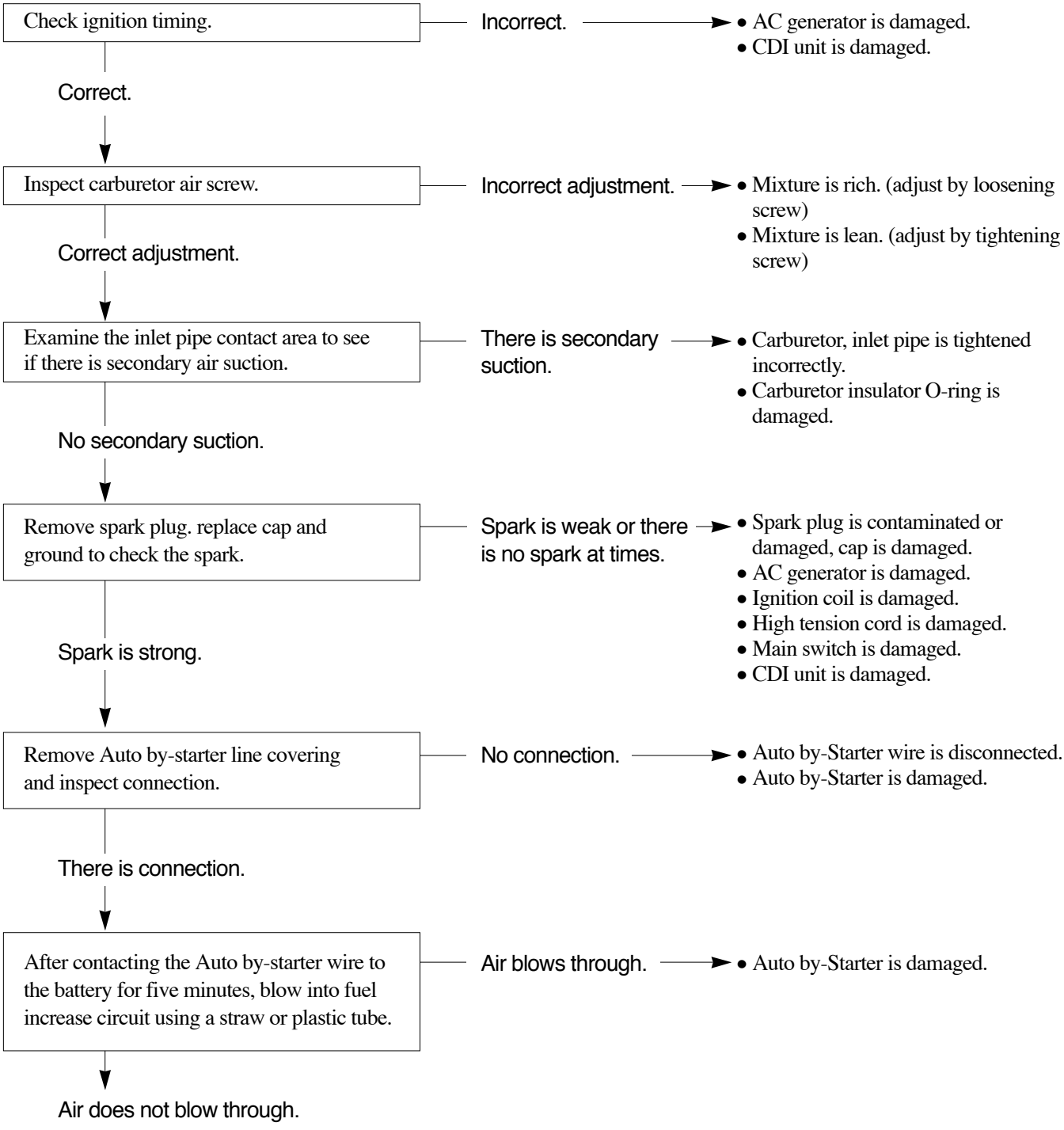
After starting and after becoming wet, engine does not run smoothly.



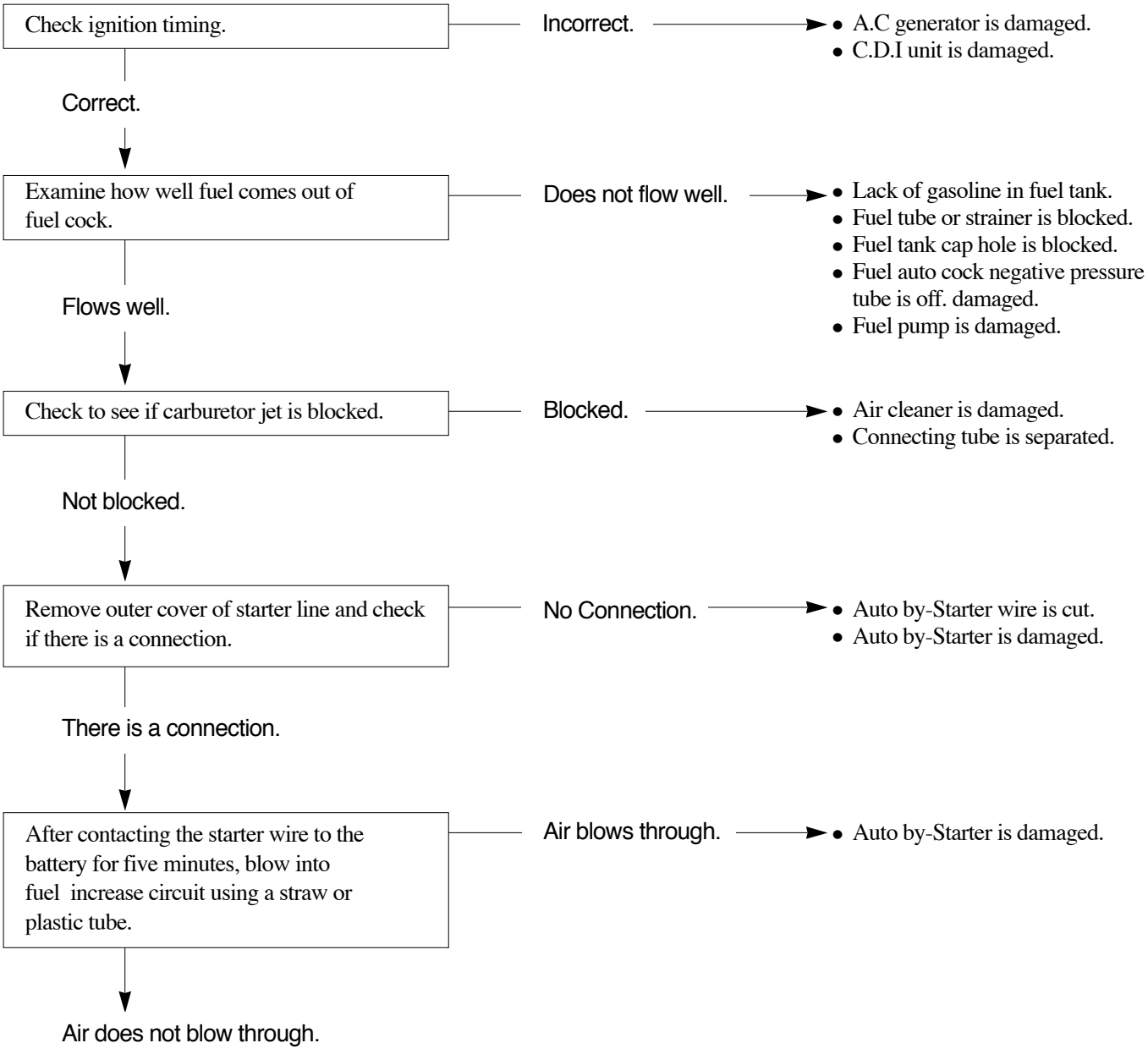
Insufficient power or reduction in speed when travelling at high speeds.



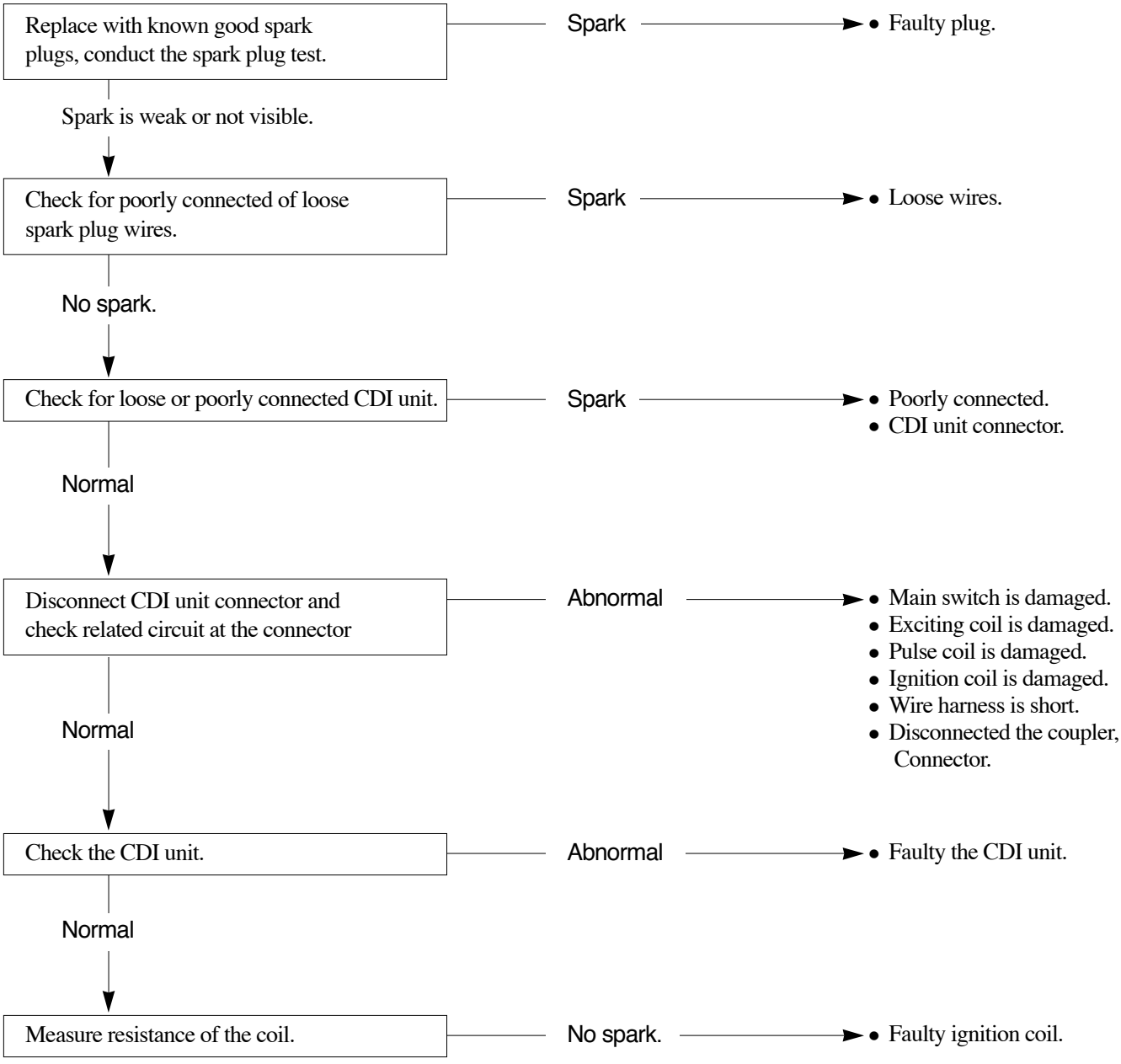
Idling rpms slow.



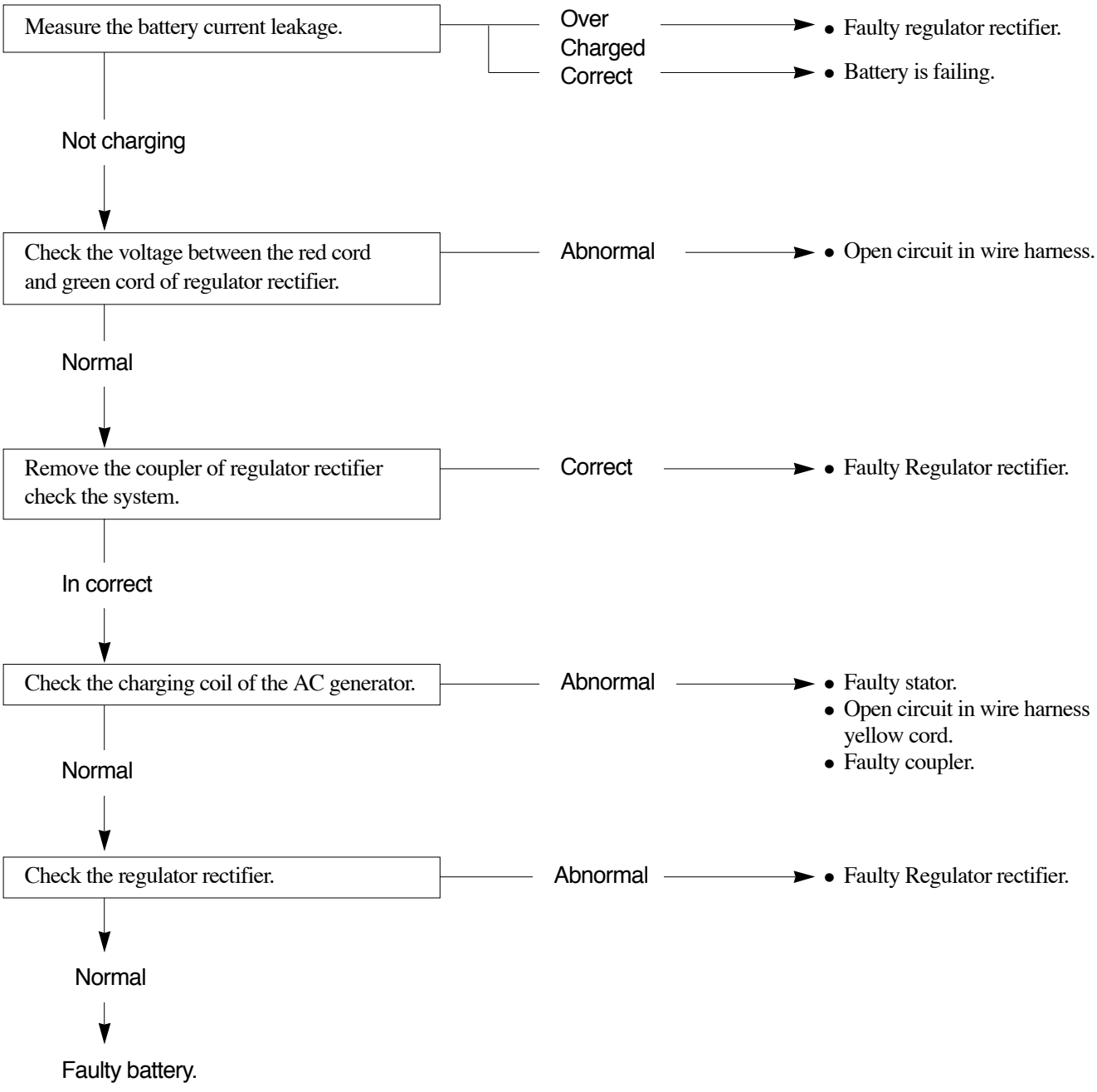
Engine problems at medium and high speeds.



No spark at spark plugs



Faulty Charging(Battery overcharging)



2. INSPECTIONS / ADJUSTMENTS

REGULAR INSPECTION SCHEDULE

Carry out pre-operation check at each scheduled maintenance period based on the information described in the owners manual.
I : Inspect, and clean, adjust, lubricate or replace, if necessary
R : Replace L : Lubricate C: Clean

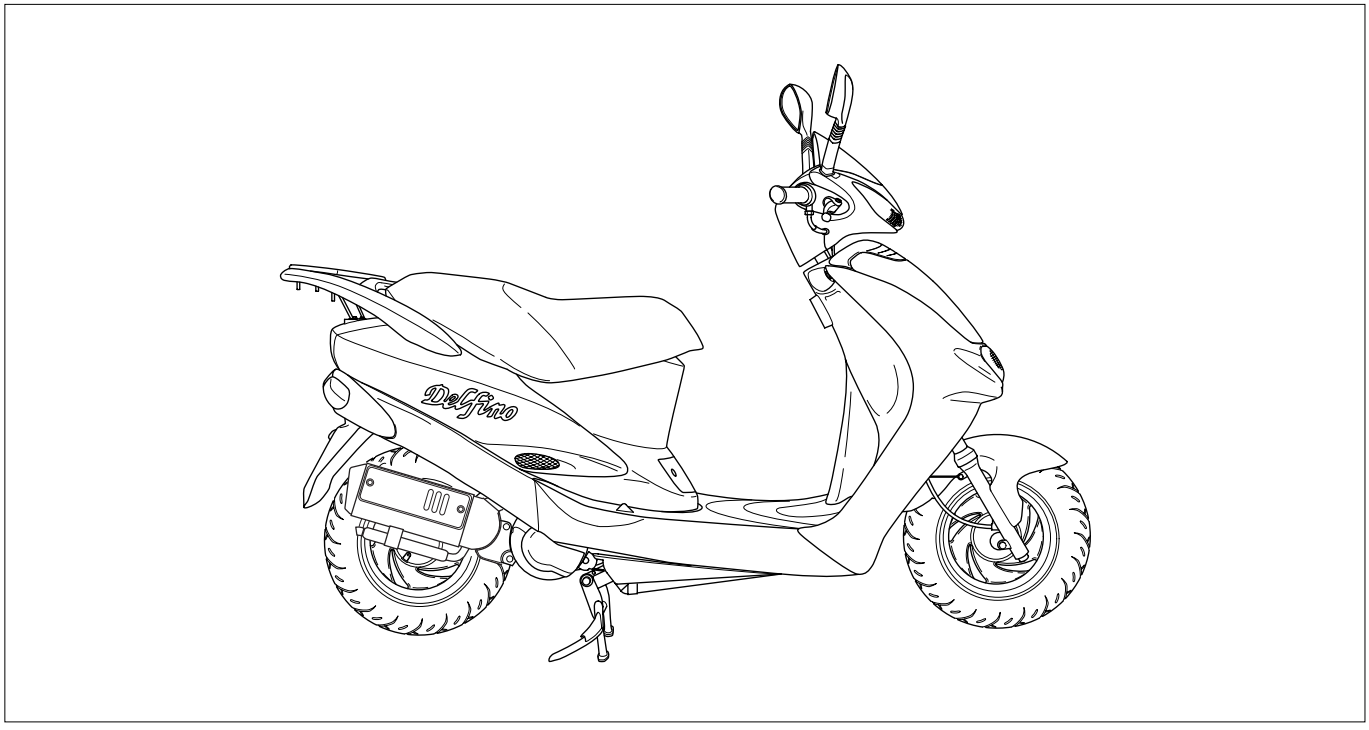
	ITEM / FREQUENCY	ODOMETER READING(NOTE 1) 1,000km	4,000km	8,000km	12,000km	REMARKS
*	FUEL LINE	I	I	I	I	
*	THROTTLE GRIP OPERATION	I	I	I	I	
* *	OIL PUMP, OIL LINE		I	I	I	
	AIR CLEANER		C	C	C	NOTE 2
	SPARK PLUG		I	R	I	
* *	REMOVE THE CARBON			C		
*	CARBURETOR IDLE SPEED	I	I	I	I	
	TRANSMISSION OIL	I			R	
	BRAKE FLUID	I	I	I	I	NOTE 3
	BRAKE SHOE / PAD	I	I	I	I	
	BRAKE SYSTEM	I	I	I	I	
*	BRAKE LIGHT SWITCH	I for each 1,000km				
*	HEAD LIGHT BEAM DISTANCE	I	I	I	I	
* *	CLUTCH SHOE		I	R	I	
*	SUSPENSION		I	I	I	
*	BOLT AND NUT TIGHTNESS	I	I	I	I	
* *	WHEEL / TIRE		I	I	I	
* *	STEERING HEAD BEARING	I		I		

* Should be received by an authorized DAELIM dealer, unless the owner has proper tools and service data and not mechanically qualified.
* * In the interest of safety, we recommended these items be served only by an authorized DAELIM dealer.

NOTE

1. After the odometer reading exceeds 12,000km, repeat maintenance service at intervals indicated in the table.
2. After riding in areas with high humidity or pollution, carry out maintenance.
3. Replace every 2years proper technology is required for this job.

EXTERNAL PARTS REMOVAL

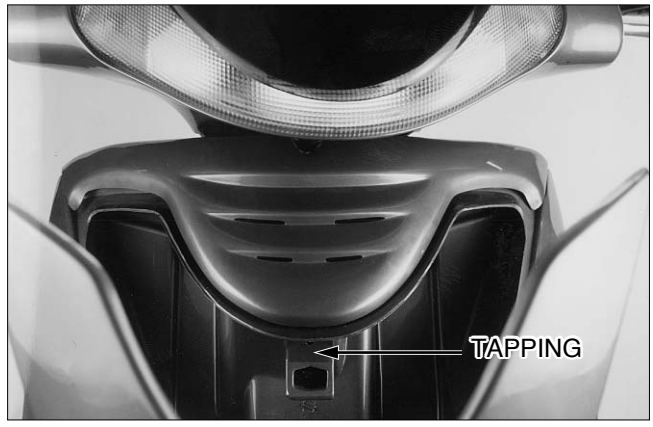


Order of cover disassembly

1. HORN COVER
2. FRONT COVER
3. FRONT UNDER COVER
4. TAIL COMBINA -TION LIGHT
5. REAR MUDGUARD
6. BODY SIDE COVER
7. LUGGAGE BOX
8. REAR CARRIER MAT
9. REAR CARRIER
10. BODY COVER
11. REAR CENTER COVER
12. CENTER COVER
13. FLOOR SIDE COVER
14. FLOOR PANEL
15. INNER BOX
16. WIND SCREEN
17. FRONT HANDLE COVER
18. REAR HANDLE COVER
19. FRONT FENDER

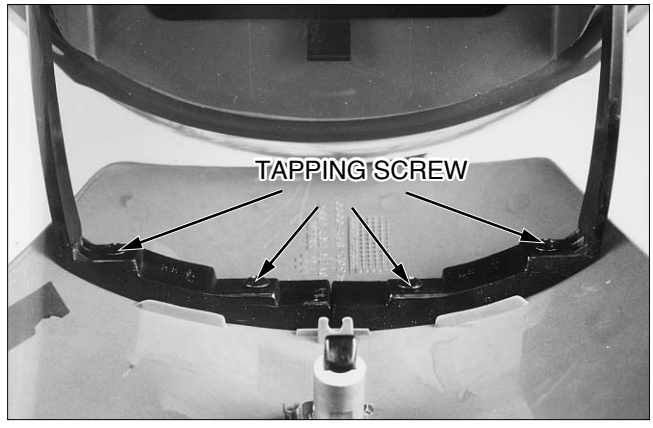
HORN COVER

- Opened the front cover, and loosen the tapping screw(IEA).
- Remove the horn cover.



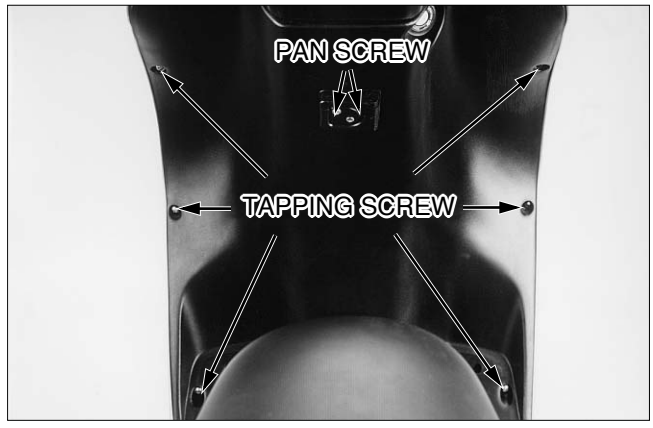
FRONT COVER

- Opened the front cover, and loosen the 4(R, L each 2) tapping screw of front cover arm.
- Remove the front cover.



INNER BOX

- Remove the horn cover.
- Loosen the 6 tapping screw of front under cover and the 2 pan screw of front under cover.
- Loosen the 2pan screw of back holder, and remove the back holder.
- Remove the floor site cover. (⇨2-6)
- Remove the floor panel. (⇨2-6)
- Remove the inner box.
- Install in the reverse order of removal.



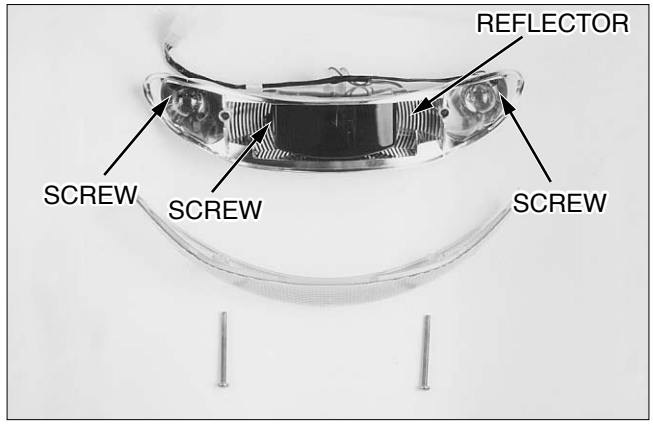
FRONT UNDER COVER

- Remove the front fender. (⇨2-7)
- Remove the front wheel.
- Remove the horn cover, and loosen the 2 tapping screw.
- Loosen the 6 tapping screw of inner box.
- Loosen the washer screw(R, L. each 1) of floor side cover.
- Remove the front under cover.
- Install in the reverse order of removal.

TAIL COMBINATION LIGHT

- Loosen the 2 pan screw, and remove the tail combination light and coupler.

- In case the buble needs replacing, loosen screw of each bulb, press hook on the back of reflector, then remove the lens.
- Replace the bulb.
- Install in the reverse order of removal.

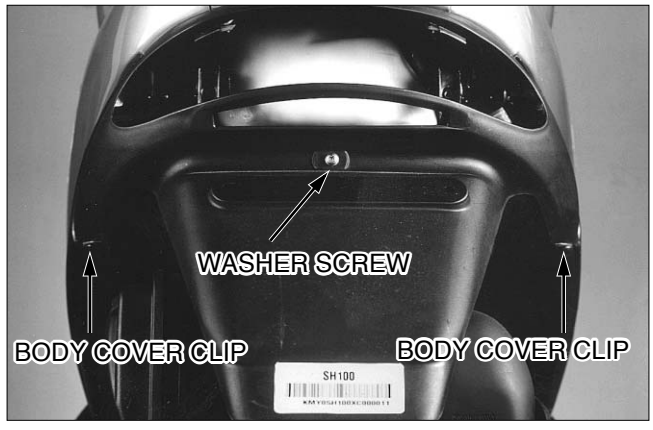


CAUTION

When replacing bulb of tail combilight, take caution not to damage the lens near the hook.

REAR MUDGUARD

- Remove the tail combination light.
- Loosen the washer screw.
- Loosen the 2(R. L) cover clip.
- Remove the mudguard.

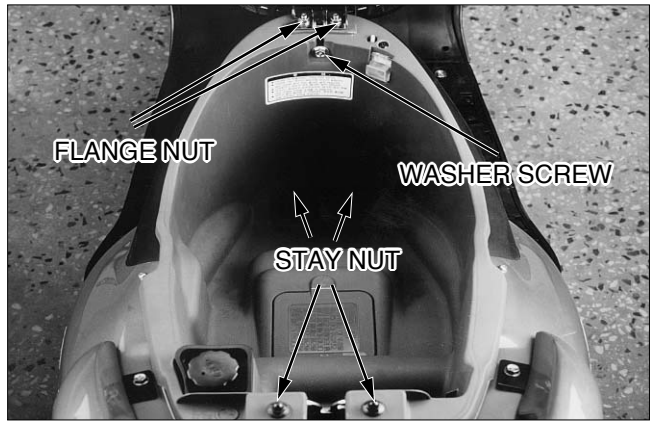


BODY SIDE COVER

- Remove the tail combination light.
- Remove the Rear mudguard.
- Loosen the body cover clip, and remove the body side cover.

LUGGAGE BOX

- Opened the seat, and Loosen the flange nut(2EA) and remove the seat.
- Loosen the 4 stay nut, 1 washer screw, and remove the trunk lamp of coupler.
- Pull upward and remove the luggage box.

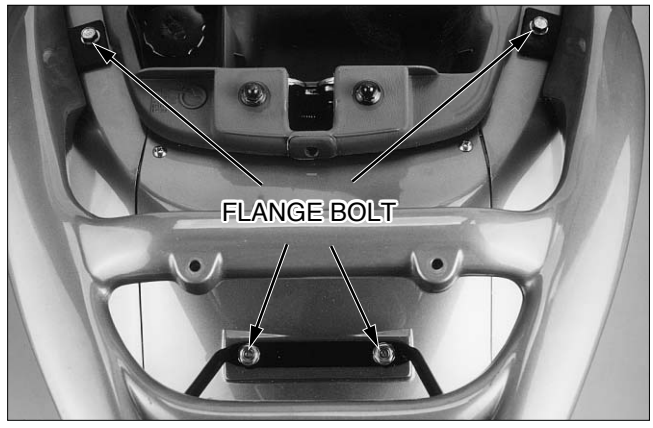


REAR CARRIER MAT

- Loosen the 4 pan screw, and remove the rear carrier mat.

REAR CARRIER

- Loosen the 2 flange bolt from body cover side(R, L).
- Loosen the 2 bolt from rear center cover.
- Remove the rear carrier.



BODY COVER

- Remove the luggage box. (⇨2-5)
- Remove the rear mudguard. (⇨2-4)
- Remove the body side cover. (⇨2-4)
- Remove the rear center cover. (⇨2-6)
- Loosen the each 2 washer screw of R/L part.
- Remove the seat lock cable.

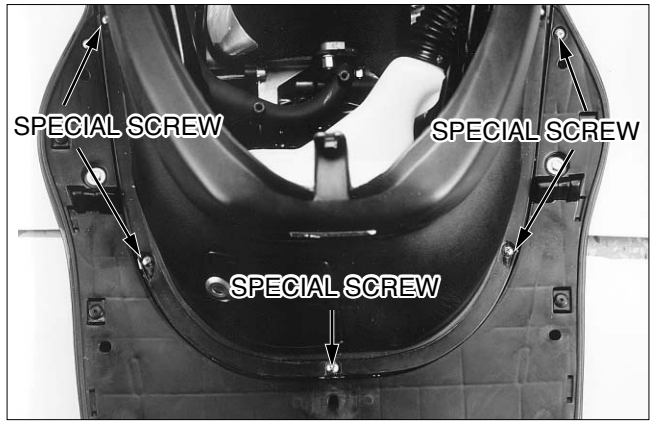
REAR CENTER COVER

- Loosen the 4 tapping screw, and remove the rear center cover.

* Repair the body cover disassembly.
  Assembly at the same time.

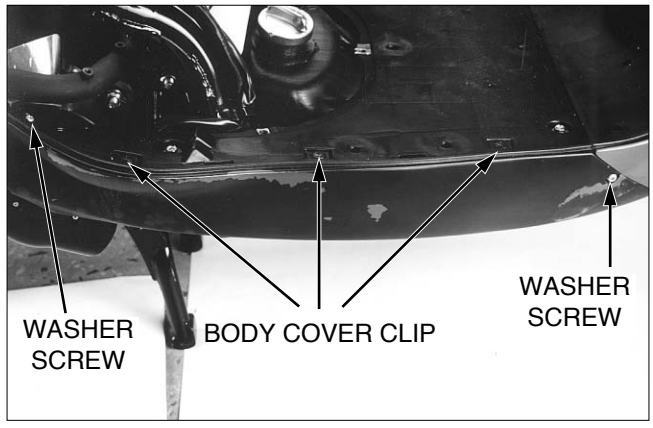
CENTER COVER

- Remove the luggage box. (⇨2-5)
- Loosen the 5 special screw, and remove the center cover.



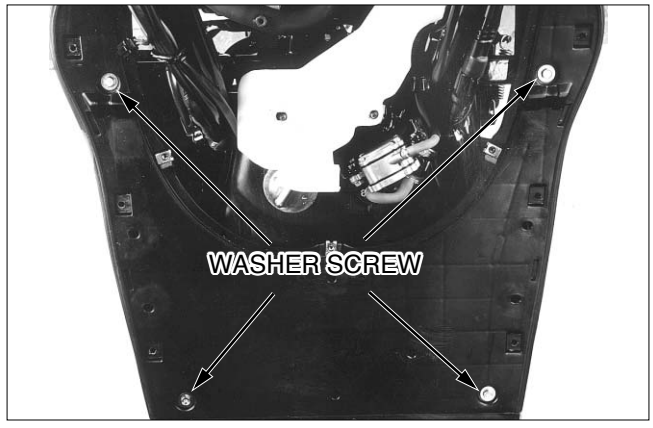
FLOOR SIDE COVER

- Remove the tail combination light. (⇨2-4)
- Remove the rear mudguard. (⇨2-4)
- Remove the body side cover. (⇨2-4)
- Loosen the washer screw (R/L each 1), and loosen the tapping of R. Lower part.
- Remove the body cover clip(R/L 6EA), washer screw(2EA).



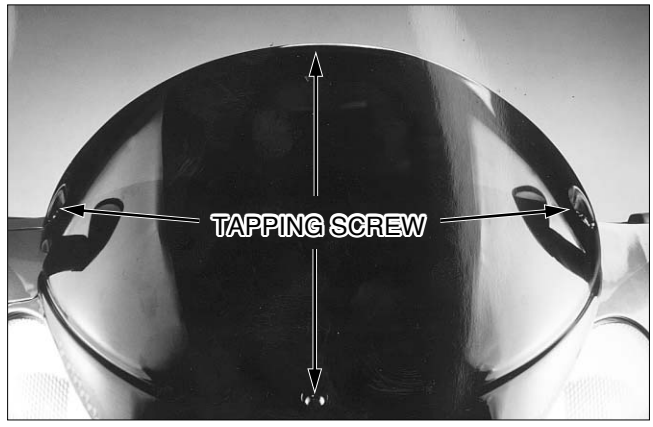
FLOOR PANEL

- Loosen the washer bolt(4EA).
- Raise back part of the floor panel slightly.
- Remove front inner cover and 凸 connections from groove.
- Move floor panel left and right, while pulling back it back wards, and then removeit.



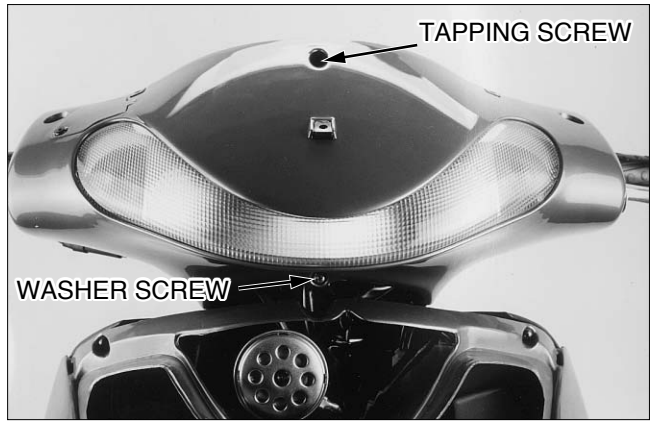
WIND SCREEN

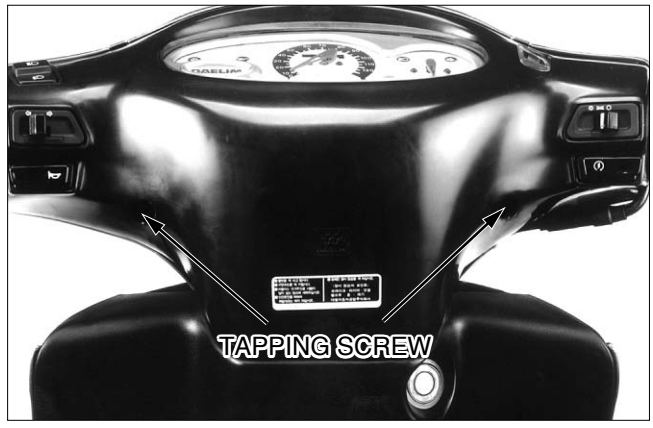
- Loosen the 3 tapping screw, and remove the wind screen.



FRONT HANDLE COVER(FRONT, REAR)

- Remove the back mirror.
- Loosen the 1 washer screw of front part, 1 tapping screw, and loosen the tapping screw of rear handle cover.
- Extract the front handle cover from R/L lever part.
- Remove the headlight and winker cord.
- Remove the front handle cover.
- Disconnect the speedometer cable.
- Disconnect the meter harness coupler.
- Remove the Rear handle cover.



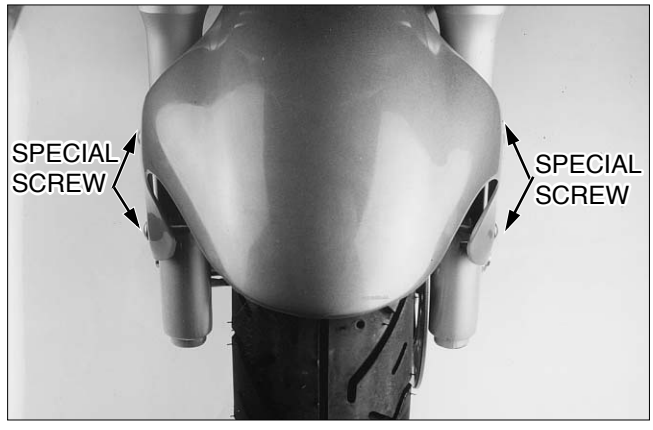


CAUTION

- Inspect the switch of operation after assembly.
- The wire, cables must be connected accurately.

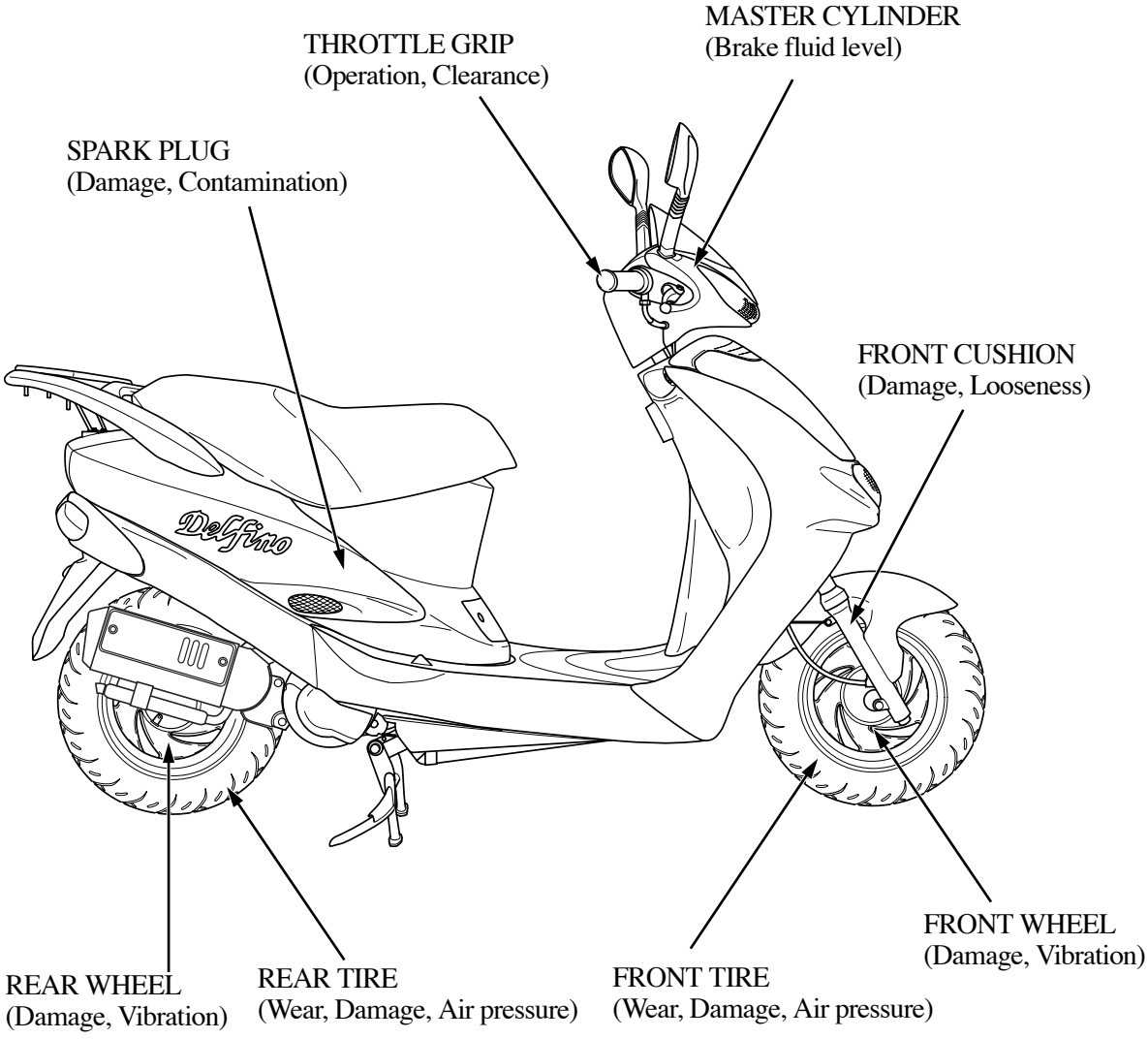
FRONT FENDER

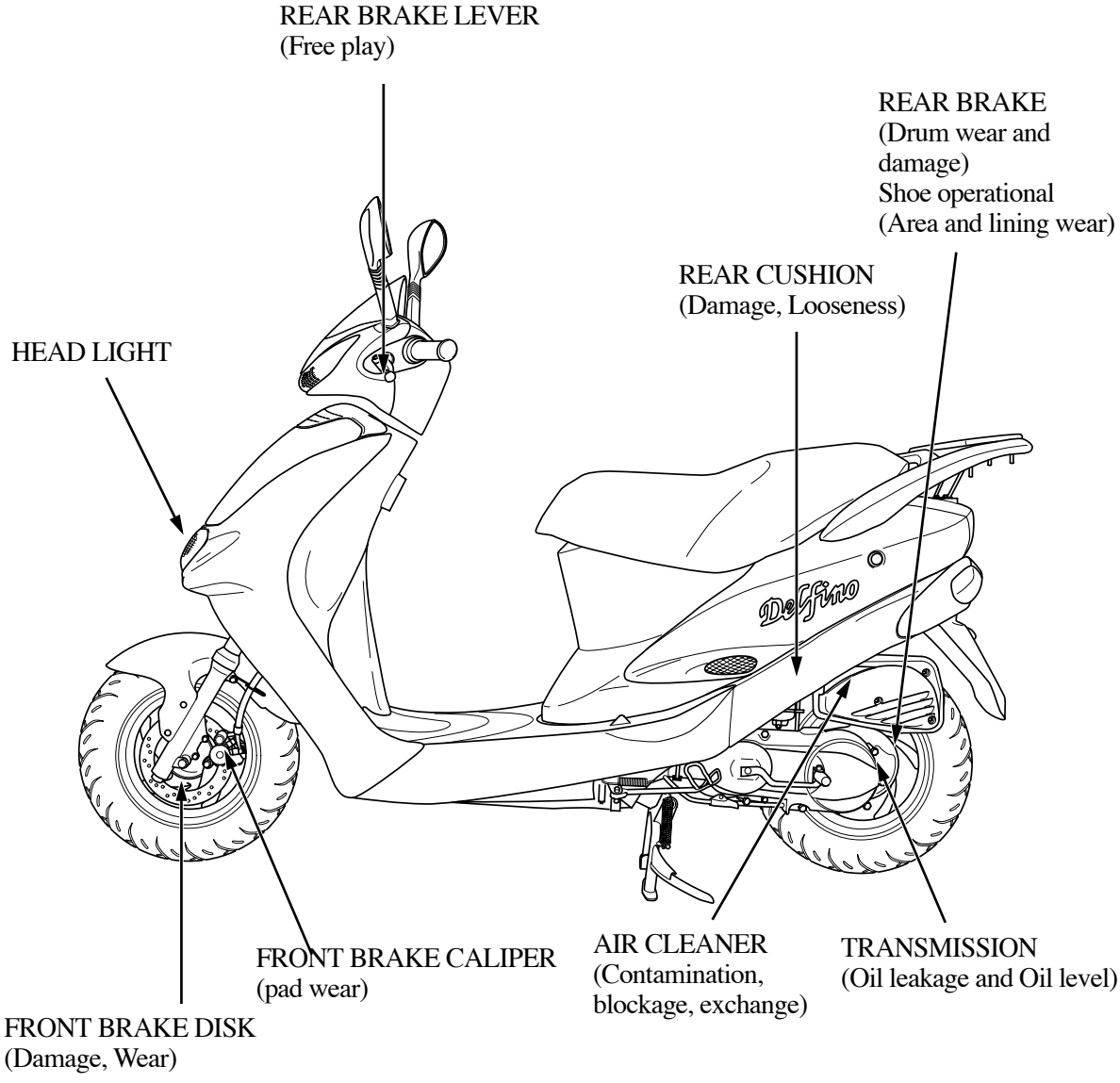
- Loosen the 4 special screw of fender, and remove the front fender.



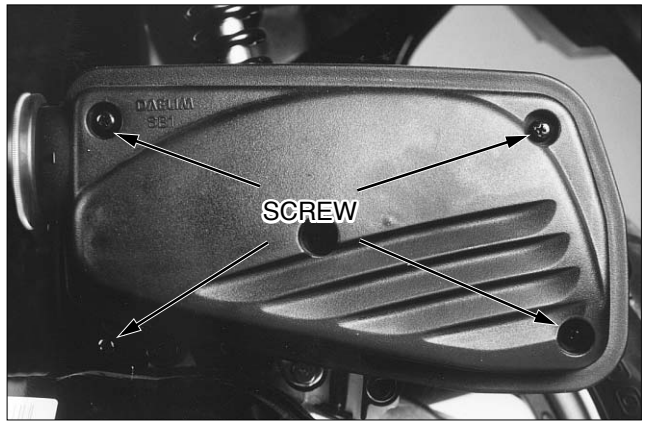
LOCATION OF MAINTENANCE PARTS

The following shows the location of parts for maintenance, inspections and adjustments.




REAR BRAKE LEVER
(Free play)
REAR BRAKE
(Drum wear and
damage)
Shoe operational
(Area and lining wear)
REAR CUSHION
(Damage, Looseness)
HEAD LIGHT
FRONT BRAKE CALIPER
(pad wear)
AIR CLEANER
(Contamination,
blockage, exchange)
TRANSMISSION
(Oil leakage and Oil level)
FRONT BRAKE DISK
(Damage, Wear)

AIR CLEANER DISASSEMBLY / ASSEMBLY



AIR CLEANER ELEMENT REMOVAL / INSTALLATION

- Remove the L. body side cover. (⇨2-4)
- Remove the 5 air cleaner screw and cover.
- Remove the air cleaner.
- Assembly in the reverse order of the disassembly.

AIR CLEANER CASE COVER / DUCT REMOVAL / INSTALLATION

- Remove the L. body side cover. (⇨2-4)
- Remove the luggage. (⇨2-5)
- Loosen the air cleaner case tube band.
- Loosen the 5 air cleaner case cover, and remove the cover 1 duct.

3. LUBRICATION SYSTEM

SERVICE INFORMATION

⚠CAUTION

- Be sure to remove all air from oil line after performing maintenance work. Air in the oil line hinders lubrication and leads to clogging of the engine.
- Remove air from oil tube and oil pump if the oil tube is taken off of if air enters the oil tube.

- Maintenance on the oil pump is done without the engine being removed from the vehicle.
- When disassembling the oil pump, do not allow foreign substances from entering the engine or oil pump.
- Do not disassemble the oil pump assembly.
- If the oil tube is disassembled, place a tube clip or band on the oil tube to prevent oil from leaking out.

TROUBLESHOOTING

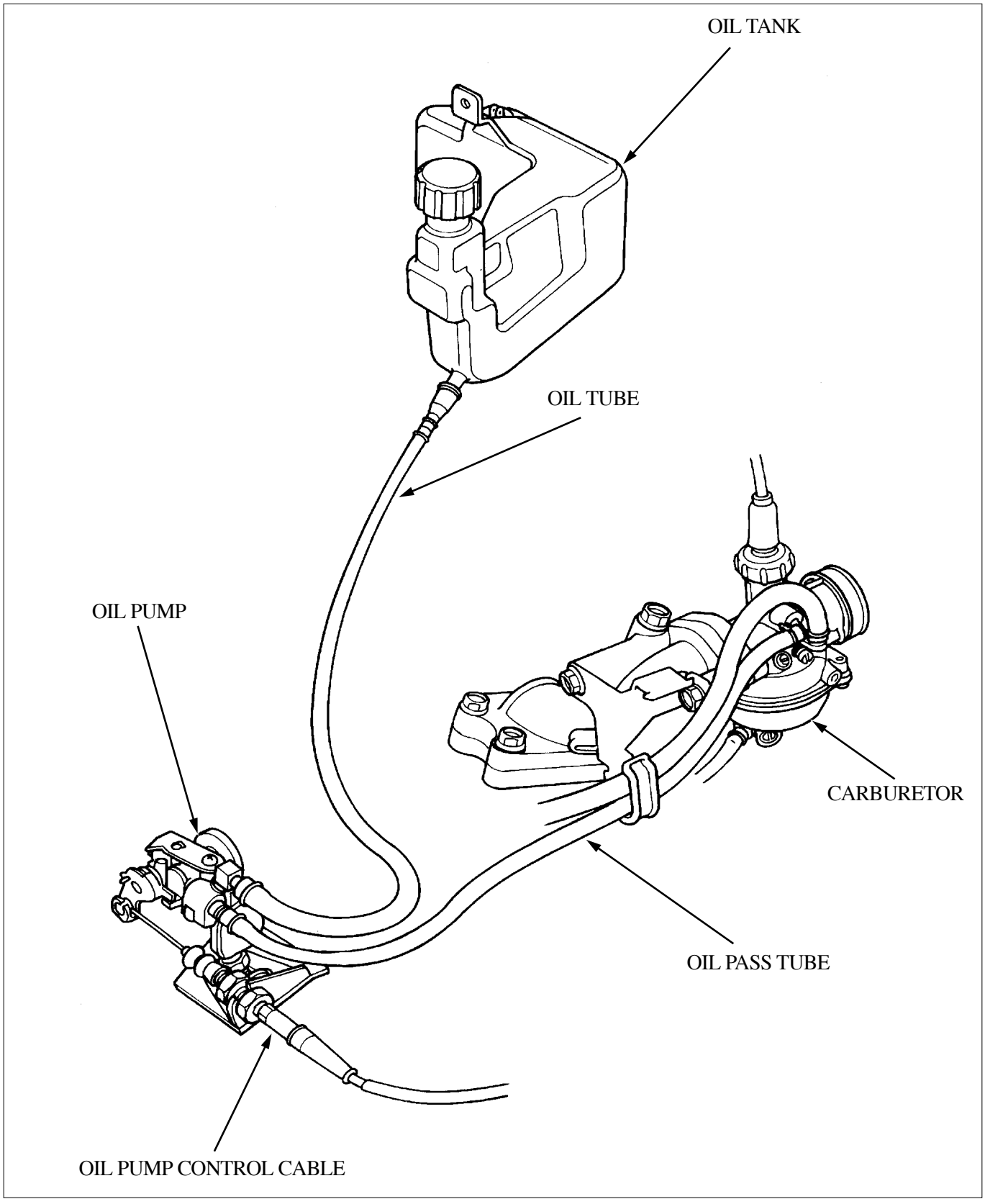
Overheating or engine clogging

- Faulty adjustment of oil pump(insufficient amount pumped).
- Bad quality of engine oil.
- Engine oil not being injected or blocked, bent strainer screen or oil tube.
- Entering of air in oil tube system.
- Faulty oil pump.
- Engine oil not being supplied from oil tank.
  - blocked oil tank cap air hole.
  - blocked oil strainer screen.

Excess exhaust smoke, accumulation of carbon on sparkplug

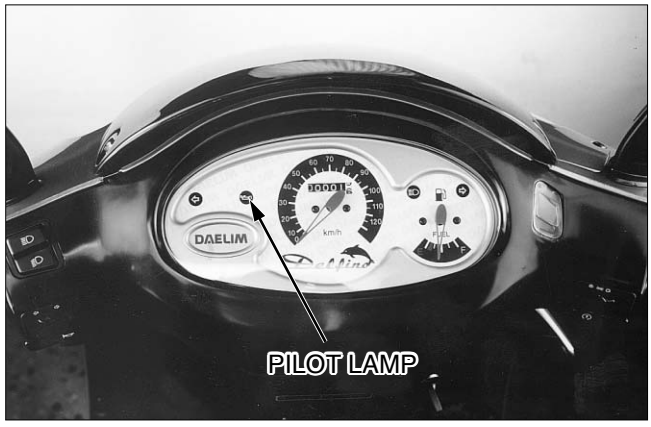
- Faulty adjustment of oil pump(over-pumped amount).
- Bad quality of engine oil.

OIL SYSTEM DRAWING

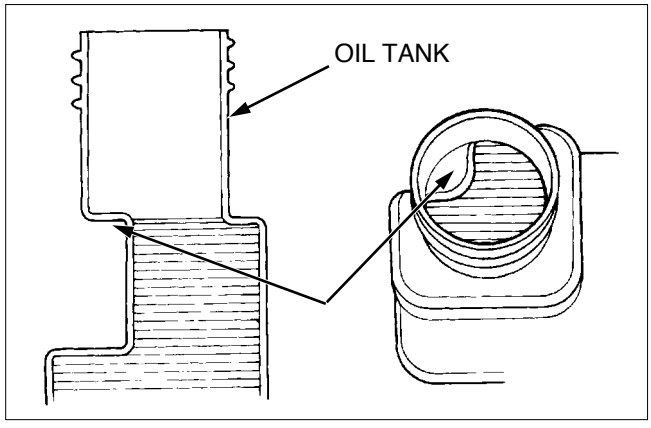


ENGINE OIL LEVEL CHECK

- If pilot lamp turns on when main switch is on, check engine oil level.
  Oil level during oil lighting : 0.2 *l*

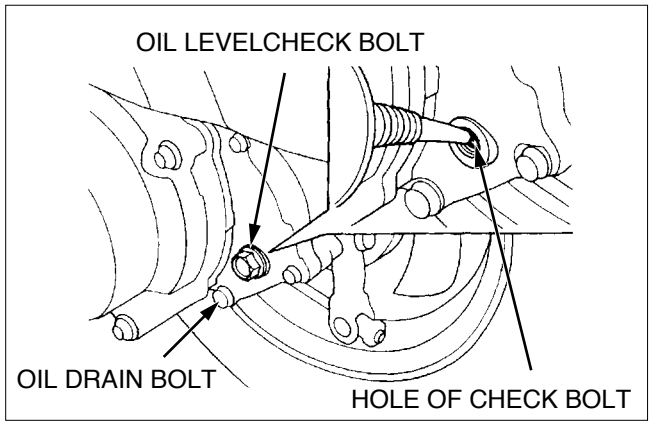


- Remove oil tank cap, and pour oil up to the projected part as shown infigure.
- After assembling oil cap tightly turn on main swich, then check if pilot lamp is turned off.

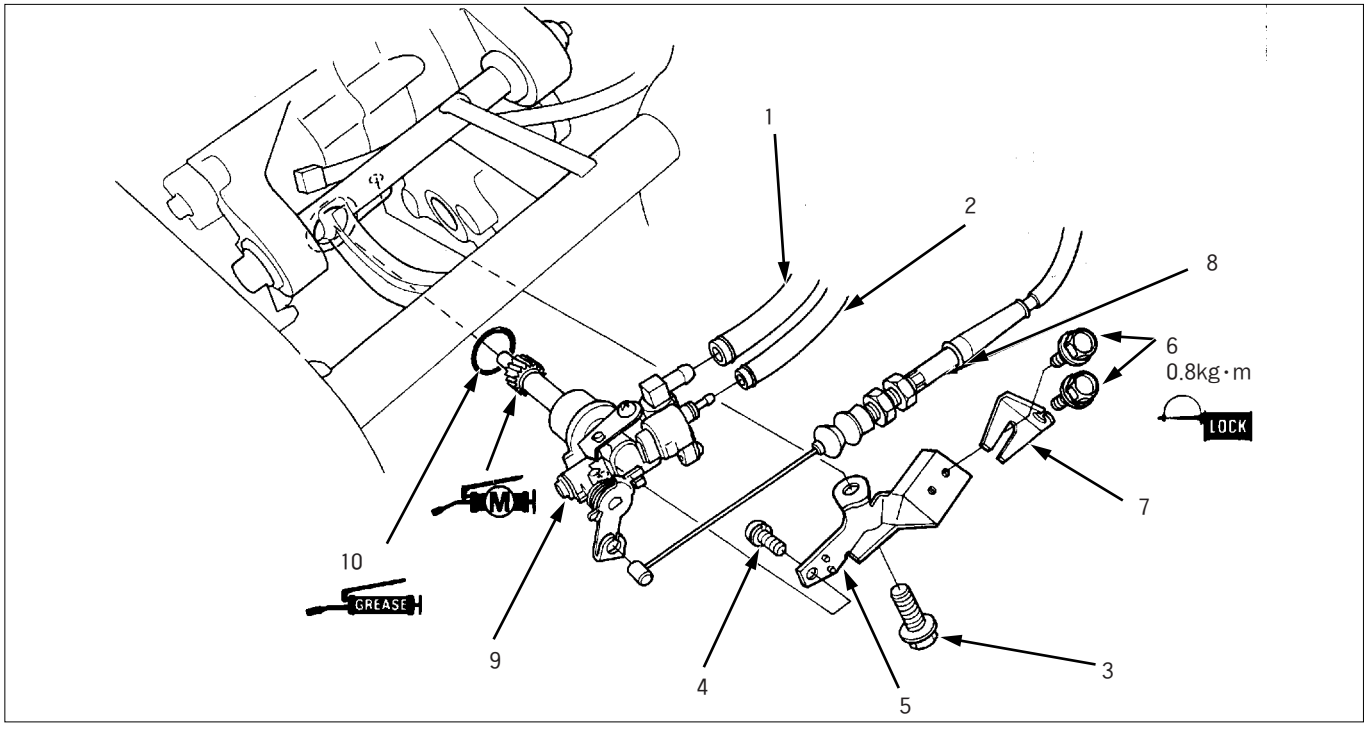


TRANSMISSION OIL

- Check if oil leaks from rear wheel gear box.
- Check if oil flows out from the hole of oil level check bolt.
- In case the oil level is low, slowly pour oil through oil injection hole with the recommended transmission oil.
- Tighten the oil level check bolt.
  Torque : 1.8kg-m
- Check if oil leaks out after the engine starts.
- Fill in oil after loosening drain bolt.
- Tighten drain bolt and oil check bolt securely after replace ment.



OIL PUMP DISASSEMBLY / ASSEMBLY



CAUTION

Be sure to remove all air from oil line after performing maintenance work.
Air in the oil line hinders lubrication and leads to clogging of the engine.

CAUTION

- Install in the reverse order of removal.
- In case air is inserted into oil tube caused by oil tube removal or thorough consumption of oil remove air from oil pump, then remove air fram oil pass tube.

RELATED OPERATIONS

- Disassembly the starter motor(⇨13-10)

	OPERATION / PART NAME	NUMBER	REMARK
	Disassembly		
1	Oil tube	1	CAUTION Place tube clip or valve on oil tube to prevent oil leaking.
2	Oil pass tube	1	
3	Oil pump bolt	1	
4	Bolt	1	
5	Bracket	1	
6	Oil pump cable stay bolt	2	
7	Stay	1	CAUTION Inspect the oil pump. (⇨3-5)
8	Oil pump control cable	1	
9	Oil pump	1	
10	O-ring	1	

OIL PUMP ADJUSTMENT

CAUTION

Perform after inspection and adjustment of throttle cable.

- Check to see if the matching mark of the oil pump body and control lever are aligned in a state where the throttle grip is completely rotated.
- Adjustment is performed by loosening the oil pump cable stay nut and turning the control nut.
- While the engine is running, slightly open the throttle and check to see if the control lever operates together with the increase in engine rpms.

CAUTION

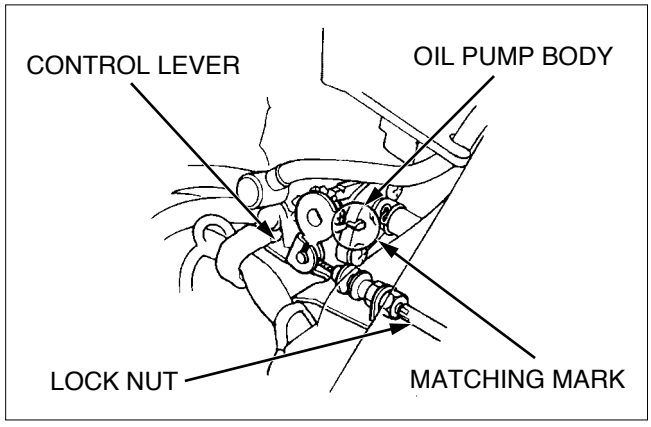
Do not adjust the control lever matching mark to the closed side of the oil pump body matching mark. If this is done, the amount of pumped oil is reduced, negatively affecting the engine. Make sure that the open axis stays within a 1 mm sphere.

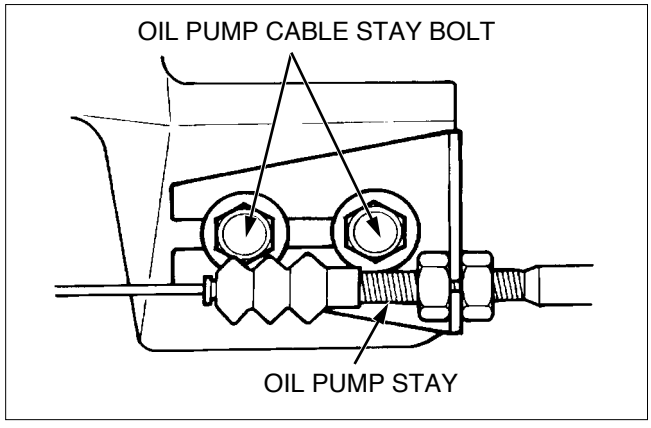
The following occurs when the oil pump is adjusted incorrectly.

- When the oil pump control lever is excessively opened: emitting of white exhaust gas or starting problems.
- When the oil pump control lever is insufficiently opened: clogging of engine.

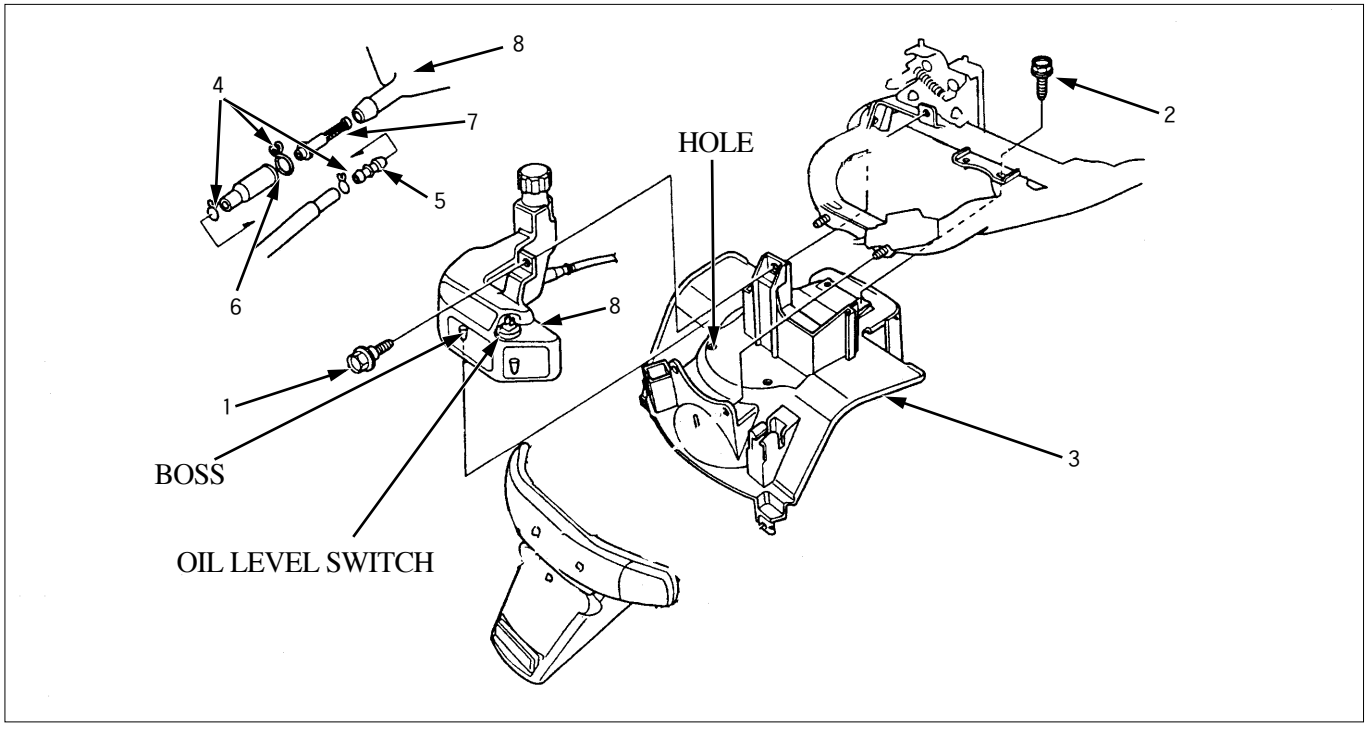
CAUTION

- In case of removing stay bolt of oil pump cable, coat bolt screw with screw lock agent.





OIL TANK DISASSEMBLY / ASSEMBLY



CAUTION

Assembly is done in the reverse order of disassembly.

RELATED OPERATION

- Remove the body cover.

	OPERATION / PART NAME	NUMBER	REMARK
	Removal		
1	Oil tank mount bolt	1	
2	bolt	2	
3	Rear fender	1	CAUTION Remove the oil tank from rear fender.
4	Crip	3	CAUTION Remove the oil tube.
5	Joint	1	
6	Rubber	1	
7	Oil strainer	1	CAUTION Remove from the oil tank.
8	Oil tank	1	CAUTION Disconnect of oil level switch.

4. FUEL SYSTEM

CAUTION WHEN PERFORMING MAINTENANCE

- Do not overly tighten or bend cables. Cables that are bent or damaged do not operate correctly.
- Take caution when working in the area of O-ring and replace before re-assembling.
- Before disassembling the carburetor, unscrew the float chamber drain screw and receive the draining gasoline in a container.
- After disassembling the carburetor, cover the port section with tape to prevent the entering of foreign substances into the engine.
- Remove gasoline from carburetor float chamber when storing the vehicle for more than one month.

TROUBLESHOOTING

The vehicle does not start
- No Fuel in Fuel tank.
- Fuel is not coming out of carburetor.
- Too much fuel is flowing into cylinder.

Idle is unstable and engine turns off after starting
- Auto-by starter is damaged.
- Ignition system is damaged.
- Using low quality gasoline.
- Suction system is experiencing secondary in take of air.
- Idle is adjusted improperly.
- Air screw is adjusted improperly.
- Compression pressure is low.
- Air/Fuel mixture is either too lean or rich.
- Carburetor is blocked.

Mis-firing occurs when driving at highspeeds
- Ignition system is damaged.
- Mixture is too lean.

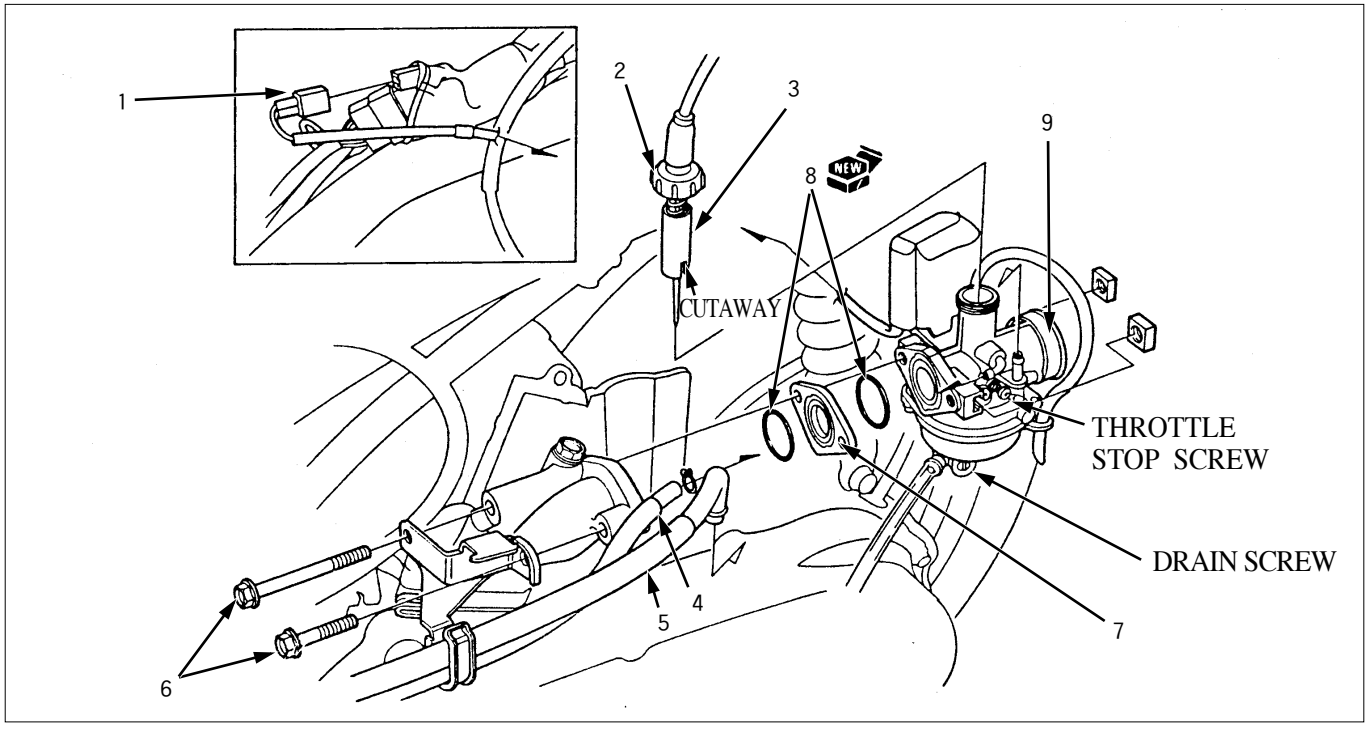
Bock firing
- Ignition system is damaged.
- Mixture is too lean.

Insufficient power and high fuel consumption
- Air cleaner is blocked.
- Ignition system is damaged.
- Mixture is too rich.

Air / Fuel mixture is extremely lean
- Fuel jet is blocked.
- Float valve is damaged.
- Oil level is low.
- Bad ventilation of air in tank cap.
- Fuel strainer screen is blocked.
- Fuel tube is bent, creased or blocked.
- Suction system is receiving secondary suction of air.
- Insufficient amount pumped.

Air / Fuel mixture is extremely rich
- Air jet is blocked.
- Float valve is damaged.
- Oil level is too high.
- Auto-by starter is damaged.
- Air cleaner is blocked.

CARBURETOR REMOVAL / INSTALLATION



⚠CAUTION

Flammable

CAUTION

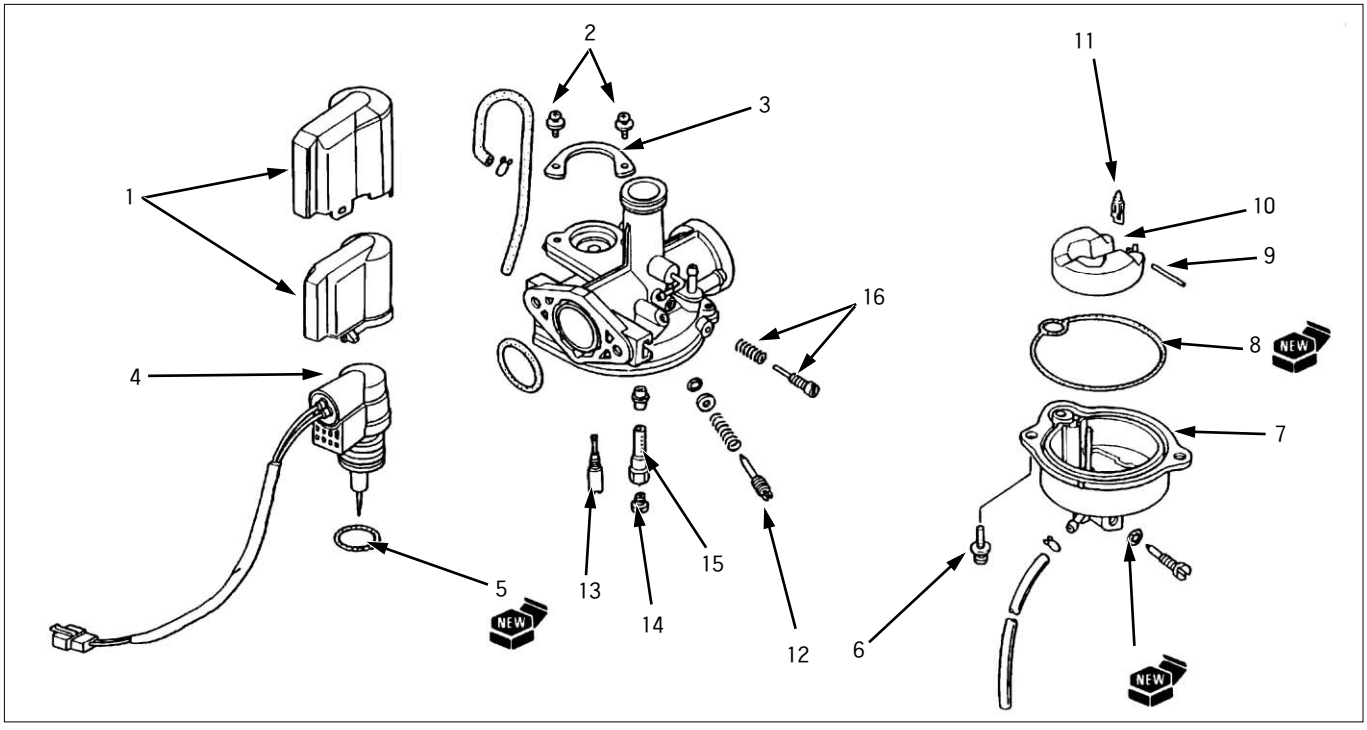
- Assembly is done in the opposite order as disassembly.
- Remove drain screw to abolish the gasoline of carburetor chamber.

RELATED OPERATION

- Air cleaner removal / installation
- Luggage box removal / installation

	OPERATION / PART NAME	NUMBER	REMARK
	Removal		
1	Auto-by starter coupler	1	CAUTION Disconnect
2	Cap top	1	
3	Throttle valve	1	
4	Oil tube	1	
5	Fuel tube	1	
6	Carburetor bolt	2	
7	Insulator	1	
8	O-ring	2	
9	Carburetor	1	
	Installation		
	8 ⇨ 1		CAUTION • When assembling, make sure to match the throttle valve cutaway with the stop screw.
3	Throttle valve	1	• When assembling, securely tighten cap top, ensuring that it is not loosen.
2	cap top	1	

CARBURETOR DISASSEMBLY / ASSEMBLY



CAUTION

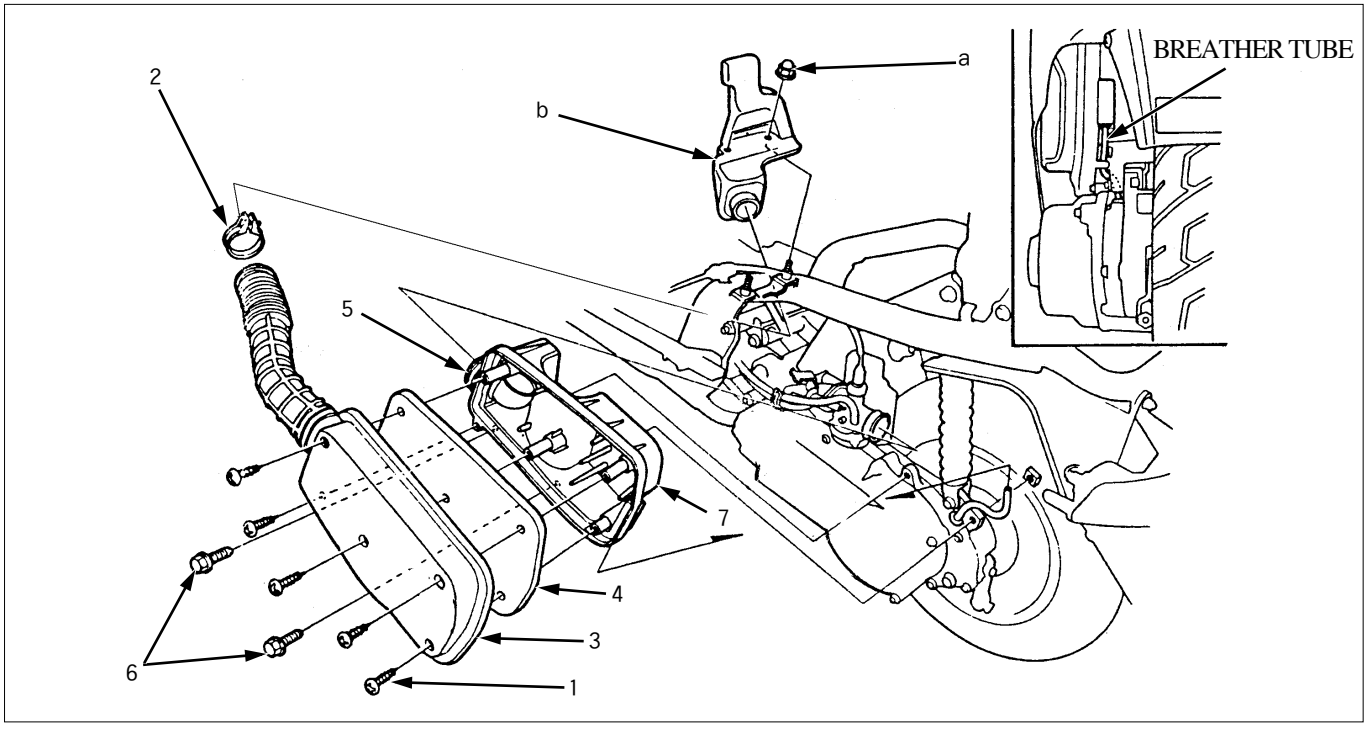
Assembly is done in the opposite order as disassembly.

RELATED OPERATION

- Carburetor disassembly / assembly

	OPERATION / PART NAME	NUMBER	REMARK
	Removal		
	Auto-by starter		
1	Auto-by starter cover	2	
2	Screw washer	2	
3	Auto-by starter set plate	1	
4	Auto-by starter	1	
5	O-Ring	1	
	Float chamber		
6	Screw washer	2	
7	Throttle chamber	1	
8	O-Ring	1	
9	Float pin	1	
10	Float	1	
11	Float valve	1	
	Carburetor body		
12	Air screw	1	• Before disassembling, check number of screw rotations in assembled state. • As the seat face can become damaged do not overly tighten.
13	Slow jet	1	
14	Main jet	1	
15	Jet needle holder	1	
16	Throttle stop screw / spring	1/1	
	Installation(15⇨1)		
12	Air screw		CAUTION Inspect the air screw. (⇨1-5)

AIR CLEANER DISASSEMBLY / ASSEMBLY



CAUTION

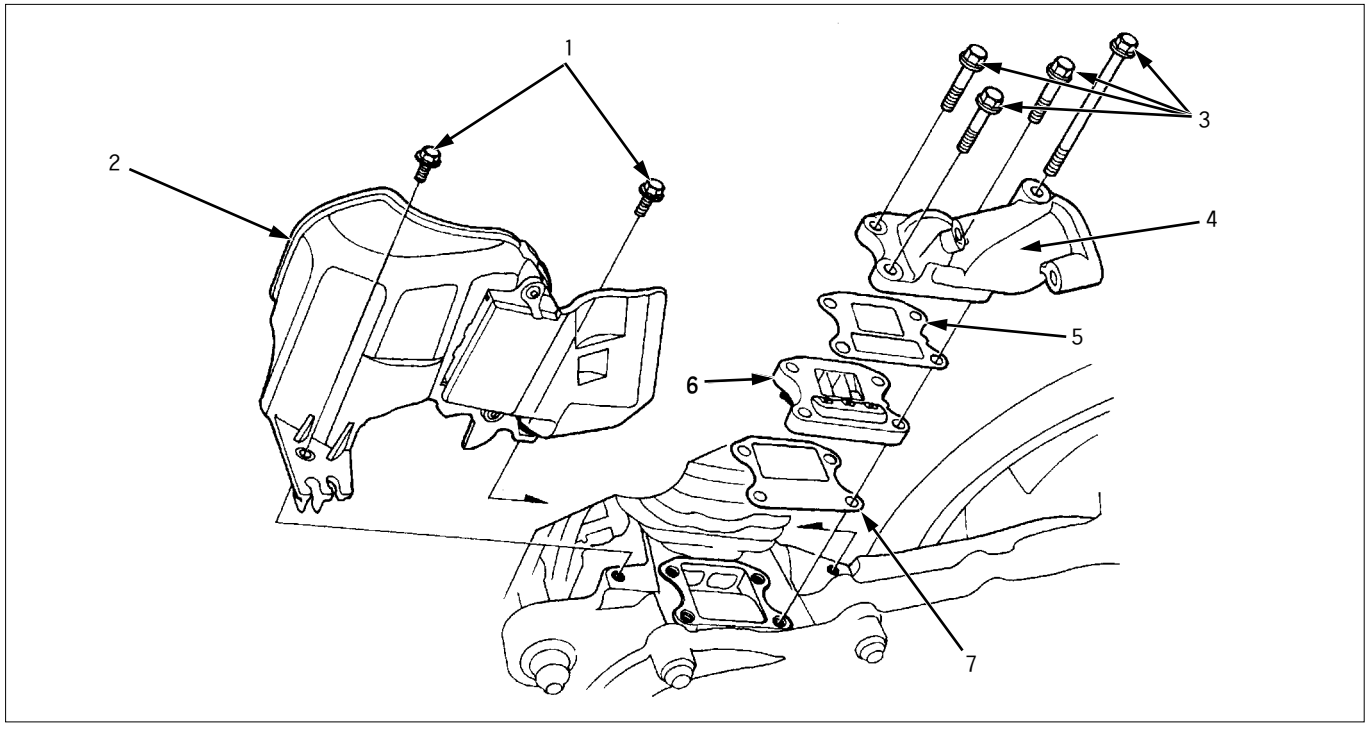
Assembly is done in opposite order as disassembly.

RELATED OPERATION

- Luggage removal / installation (⇨ 2-5)

	OPERATION / PART NAME	NUMBER	REMARK
1	Air cleaner cover screw	5	
2	Air cleaner connecting tube band	1	
3	Air cleaner case cover	1	
4	Air cleaner element	1	
	Air cleaner chamber		
a	Chamber mount nut	2	CAUTION Assemble with the luggage.
b	Air cleaner chamber	1	
5	Air cleaner connecting tube bend screw	1	CAUTION Assemble transmission the breather tube.
6	Air cleaner case mount bolt	2	
7	Air cleaner case	1	

REED VALVE DISASSEMBLY / ASSEMBLY



CAUTION

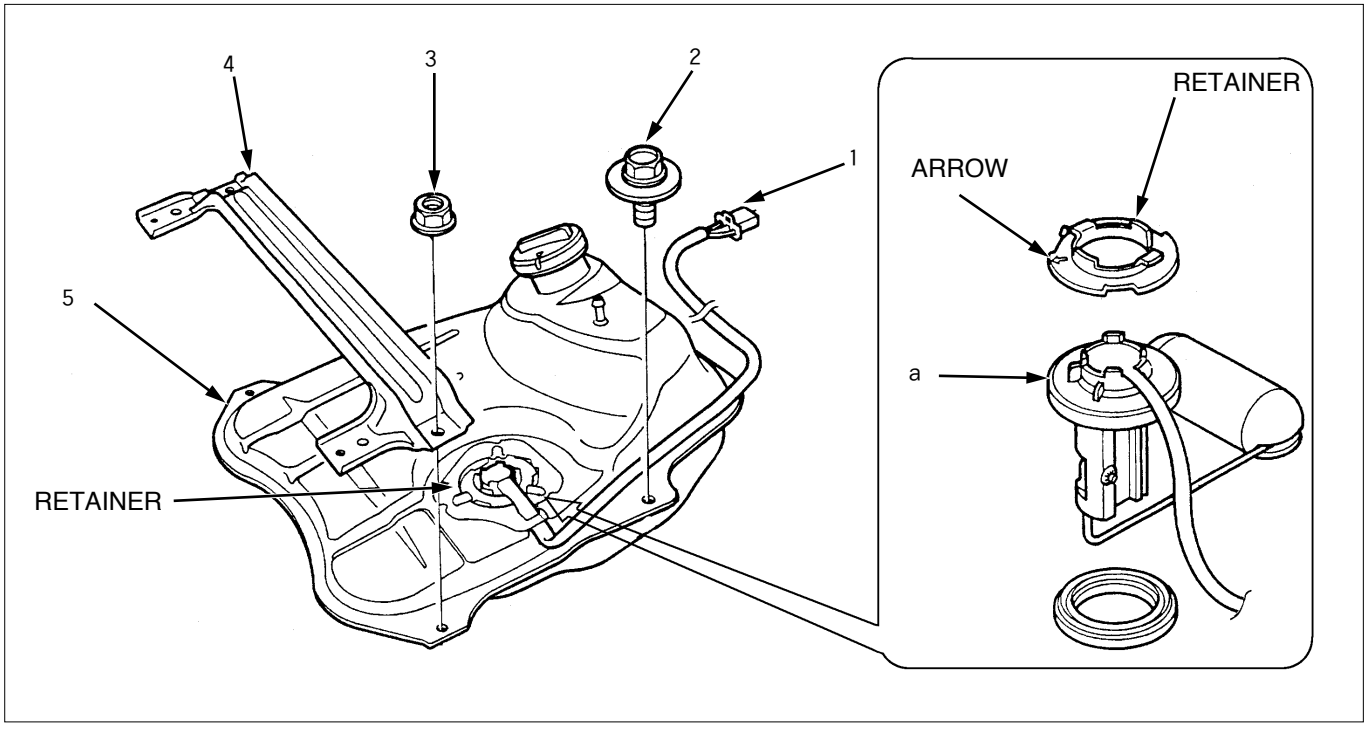
- Assembly is done in the reverse order of disassembly.
- Do not disassemble reed valve. when damaged, exchange with assembly.

RELATED OPERATION

- Carburetor removal / installation

	OPERATION / PART NAME	NUMBER	REMARK
	Removal		
1	L. Shroud mount bolt	2	
2	L. Shroud	1	
3	Flange bolt	4	
4	Inlet pip	1	
5	Inlet pipe gasket(A)	1	
6	Reed valve Ass'y	1	CAUTION Do not disassemble
7	Inlet pipe gasket(B)	1	

FUEL TANK DISSEMBLY / ASSEMBLY



⚠CAUTION

Flammable

⚠CAUTION

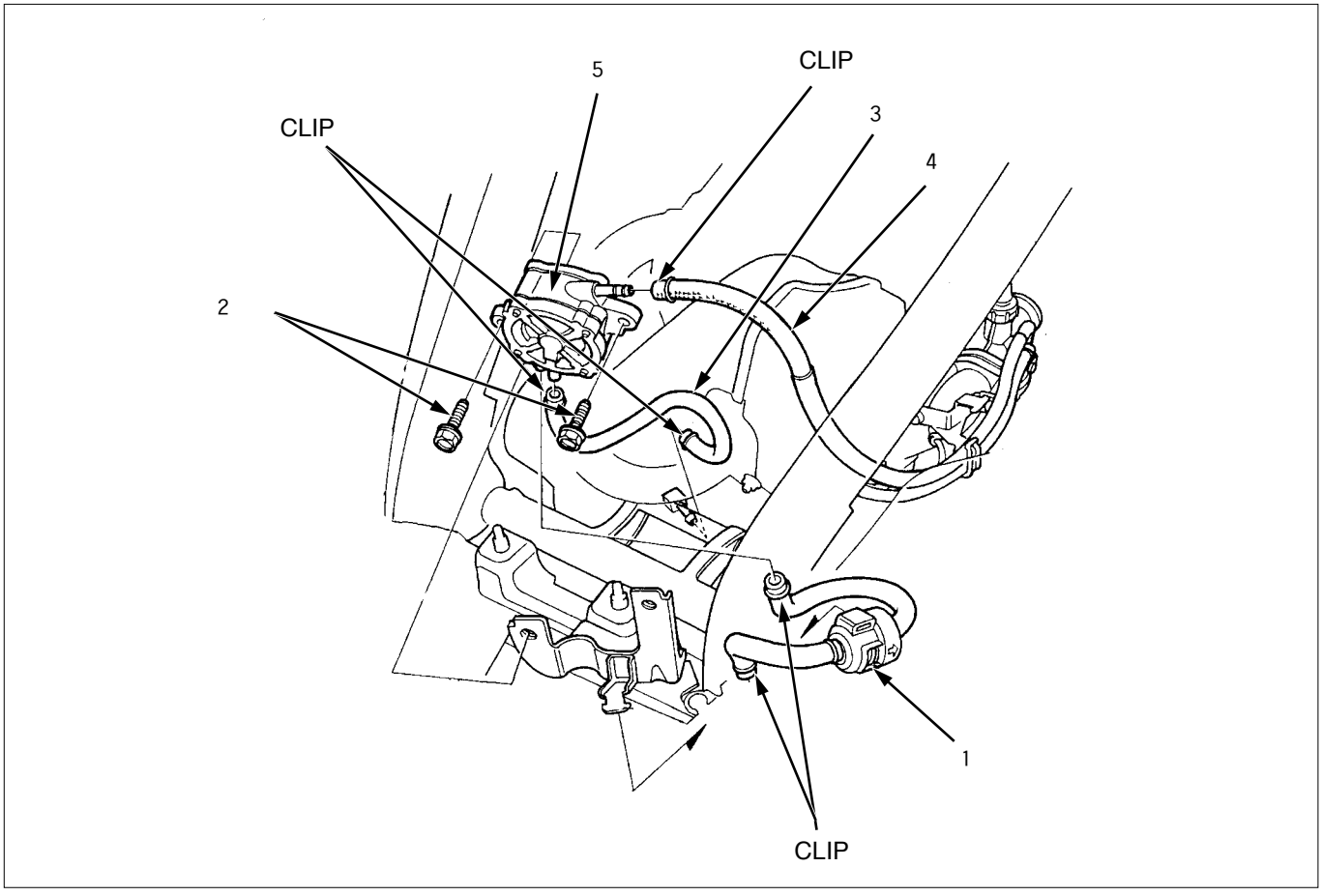
- Assembly is done in opposite order as disassembly.
- Adjust arrow mark of retainer and tank, and assemble it securely to the right side until retainer reaches stopper.

RELATED OPERATION

- Body cover removal / Installation (⇨2-5)
- Floor panel removal / installation (⇨ 2-6)

	OPERATION / PART NAME	NUMBER	REMARK
	Removal		
1	Fuel unit coupler	1	⚠CAUTION Disconnect
a	Fuel unit	1	⚠CAUTION Remove the retainer
2	Fuel tank mount bolt / washer	2/2	
3	Fuel tank mount nut	2	
4	Floor plate	1	
5	Fuel tank	1	
	Installation		
	(5⇨2)		
2	Fuel tank mount bolt / washer	2/2	⚠CAUTION Assemble the washer
a	Fuel unit	1	⚠CAUTION
1	Fuel unit coupler	1	⚠CAUTION Connected the coupler

FUEL PUMP DISASSEMBLY / ASSEMBLY



⚠CAUTION

Flammable

RELATED OPERATION

- Body cover removal / installation
- Center cover removal / installation

	OPERATION / PART NAME	NUMBER	REMARK
	Removal		
1	Fuel strainer	1	CAUTION Loosen the clip, and remove the tube.
2	Bolt	2	
3	Pulse tube	1	
4	Fuel tube	1	
5	Fuel pump	1	inspection (⇨4-8)
	Installation (5⇨1)		Assembly is done in opposite order as disassembly. CAUTION If the damaged of clip, replace the new part.

FUEL PUMP INSPECTION

CAUTION

Adjust idling rrevolution to specified range by starting engine before checking discharge quantity.

- Engine starting, idling.
- Fuel pump is in good condition if discharge quantity is over 28cc for 10seconds after dis charging fuel for 5seconds or more since fuel tube is removed from carburetor.
- If specified discharge quantity is not obtained, check fuel tube, oil pressure tube, and fuel strainer if there is no problem with them, replace fuel pump with new one.

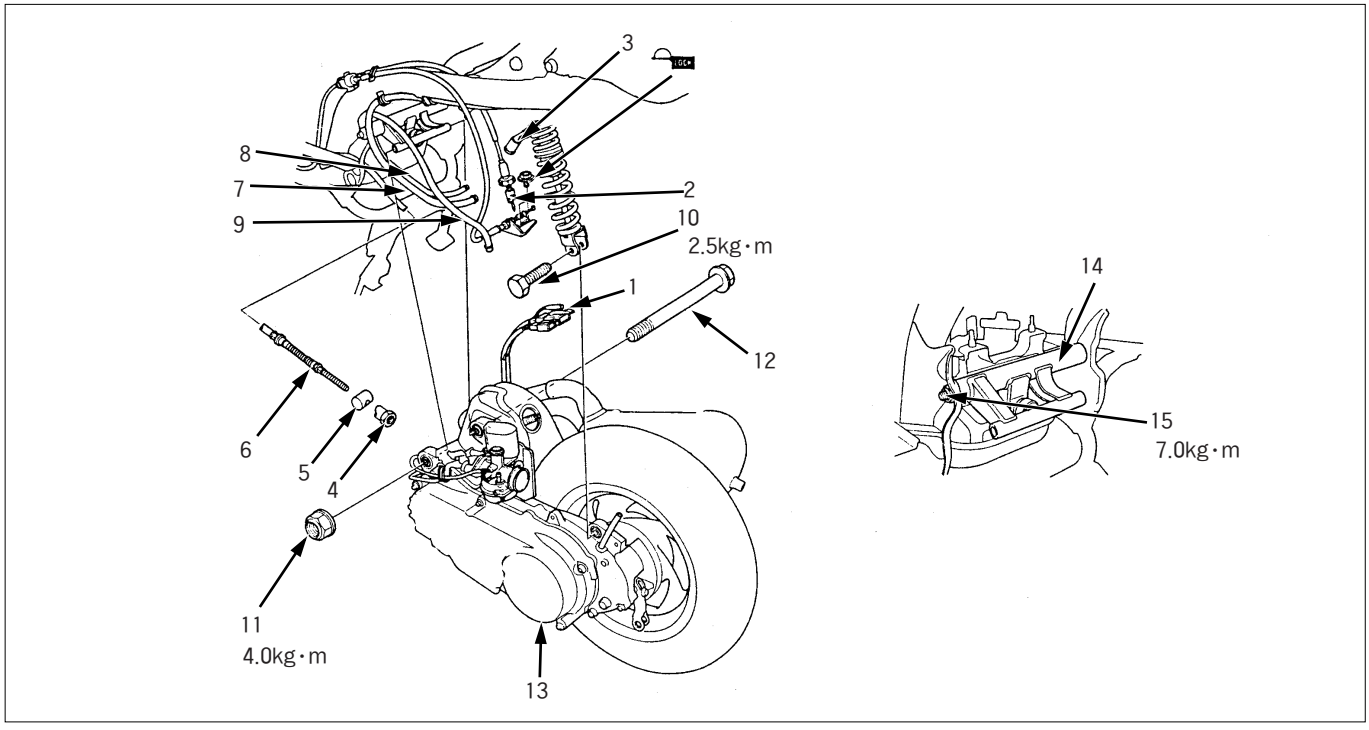
5. ENGINE REMOVAL / INSTALLATION

CAUTION WHEN PERFORMING MAINTENANCE

- When dismounting the engine, make sure to support the vehicle body and be careful not to damage the frame, engine, cables and harness.
- When dismounting the engine, tape the frame to protect.
- The following parts can be without dismounting of the engine from the vehicle body.
  - Transmission(Chapter 8)
  - AC Generator(Chapter 13)
  - Kick starter, belt-type gearless transmission(Chapter 7)
  - Cylinder head, Cylinder, Piston(Chapter 6)
  - Carburetor(Chapter 4)
  - Oil pump(Chapter 3)

- The following parts must be disassembled after the engine is dismounted.
  - Crank shaft, Crank shaft bearing, Crank case bearing(Chapter 9)

ENGINE REMOVAL / INSTALLATION



RELATED OPERATION

● Bady cover removal / installation (⇨2 - 5), Auto by starter cord disassembly (⇨4 - 3),
Air cleaner removal / installation (⇨ 4 - 4)

	OPERATION / PART NAME	NUMBER	REMARK
	Removal		
1	AC Generator cord / Starter motor cord	1	
2	Throttle valve	1	
3	Spark plug cap	1	
4	Rear brake adjust nut	1	
5	Brake arm pin	1	
6	Rear brake cable	1	Remove the L cover of clamp.
7	Oil pump and oil tank of oil tube	1	Remove the side of oil pump.
			CAUTION Oil does not spill out. Remove the side of oil pump.
8	Fuel pump and crank case of tube	1	
9	Fuel tube	1	
10	Rear cushion lower bolt	1	
11	Engine mount nut	1	
12	Engine mount bolt	1	CAUTION Securely support the frame so that the vehicle body does not fall over.
13	Engine	1	
	Engine hanger		
14	Engine hanger link	1	
15	Engine hanger nut	2	CAUTION Engine assemble, loosen the firmness.
	Installation (15⇨1)		Follow the inspection, adjusting. · Electric of inspection, Rear brake cable throttle cable. · Oil pump cable (⇨ 3-5)

MEMO

6. CYLINDER HEAD, CYLINDER, PISTON

CAUTION WHEN PERFORMING MAINTENANCE

- After disassembling parts, they must be cleaned and air-dried before inspecting and measuring.
- When disassembling the cylinder, be careful not to scratch the matching face with tools or damage the cooling pins by bumping or dropping the cylinder head.
- Take special care not to scratch the inside surface of the cylinder or the outside of the piston.

TROUBLESHOOTING

Compression pressure is too Low

- Cylinder head
  - The head gasket is cracked.
  - The head of bent or broken.
- The cylinder piston is worn

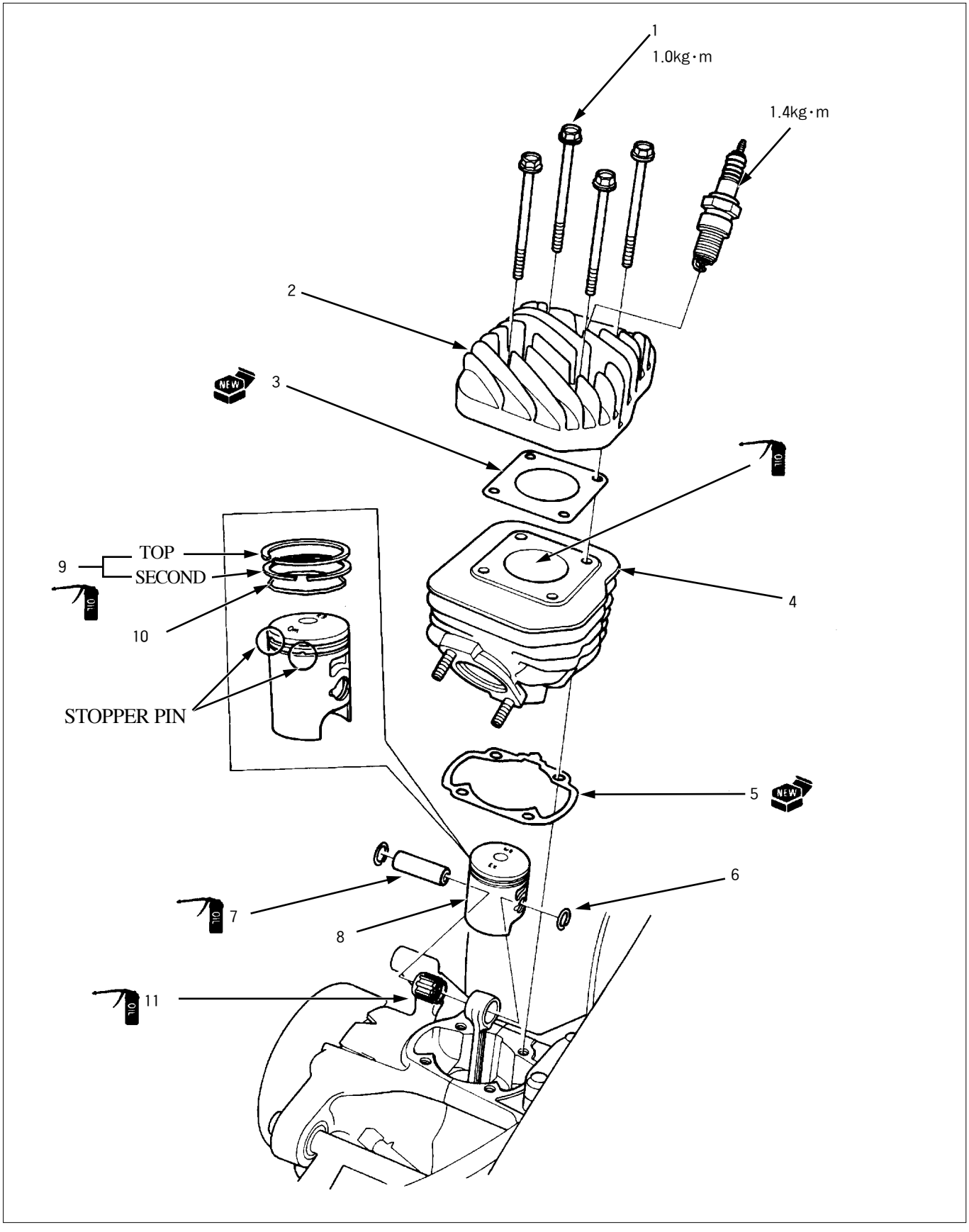
Compression pressure is too high

- Carbon accumulation on piston and in combustion chamber.

Engine noise

- The cylinder, piston, piston ring are worn.
- Piston pin hole and piston pin wear bending or crack of head.
- The connecting rod of small and bearing worn.

CYLINDER HEAD, CYLINDER, PISTON REMOVAL / INSTALLATION



⚠CAUTION

When disassembling cylinder, do not scratch the matching face with tools, etc.

CAUTION

Assembly is done in reverse order of disassembly.

RELATED OPERATIONS

- Shroud removal / installation

	OPERATION / PART NAME	NUMBER	REMARK
	Removal **Cylinder head**		
1	Cylinder bolt	4	CAUTION Bolts are loosened by rotating 2-3 times and alternating to diagonal bolt.
2	Cylinder head	1	
3	Cylinder head gasket	1	
	Cylinder		
4	Cylinder	1	CAUTION Be careful not to bend pins.
5	Cylinder gasket	1	CAUTION Be careful not to damage the cylinder and crank case gasket face when cleaning.
	Piston		
6	Piston pin clip	2	
7	Piston pin	1	
8	Piston	1	
9	Piston ring	2	
10	Expander	1	CAUTION Assemble in the inner side of the second piston ring.
11	Connecting rod small and bearing	1	

7. KICK STARTER, BELT-TYPE C.V.T

CAUTION WHEN PERFORMING MAINTENANCE

- Do not allow oil to contact the drive belt or the pully face. The transmission rate of driving force is reduced with oil contact.
- Do not operate starter motor while the L. crank case front cover is removed.

TROUBLESHOOTING

Engine does not start or vehicle does not work

- Drive belt is worn.
- Lamp plate is damaged.
- Clutch shoe is worn or damaged.
- The movable driven face spring has been cut.

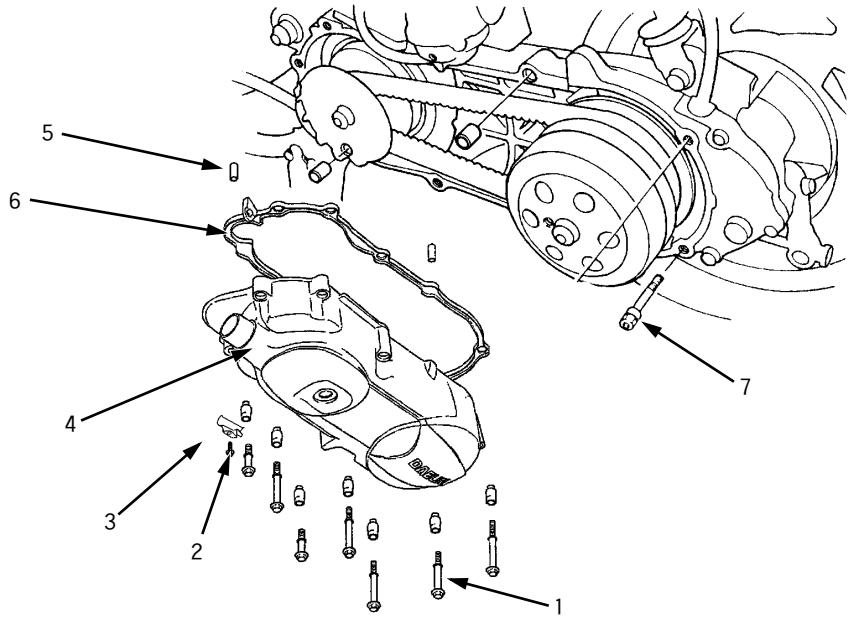
When starting to drive, the engine stops or causes the vehicle to jump forward

- Clutch shoe spring has been cut.

Can not reach top speeds and engine power is low

- Drive belt is worn.
- Movable driven face spring is damaged.
- Weight roller is worn.
- Contamination on pulley face.

L. CRANK CASE COVER REMOVAL / INSTALLATION



CAUTION

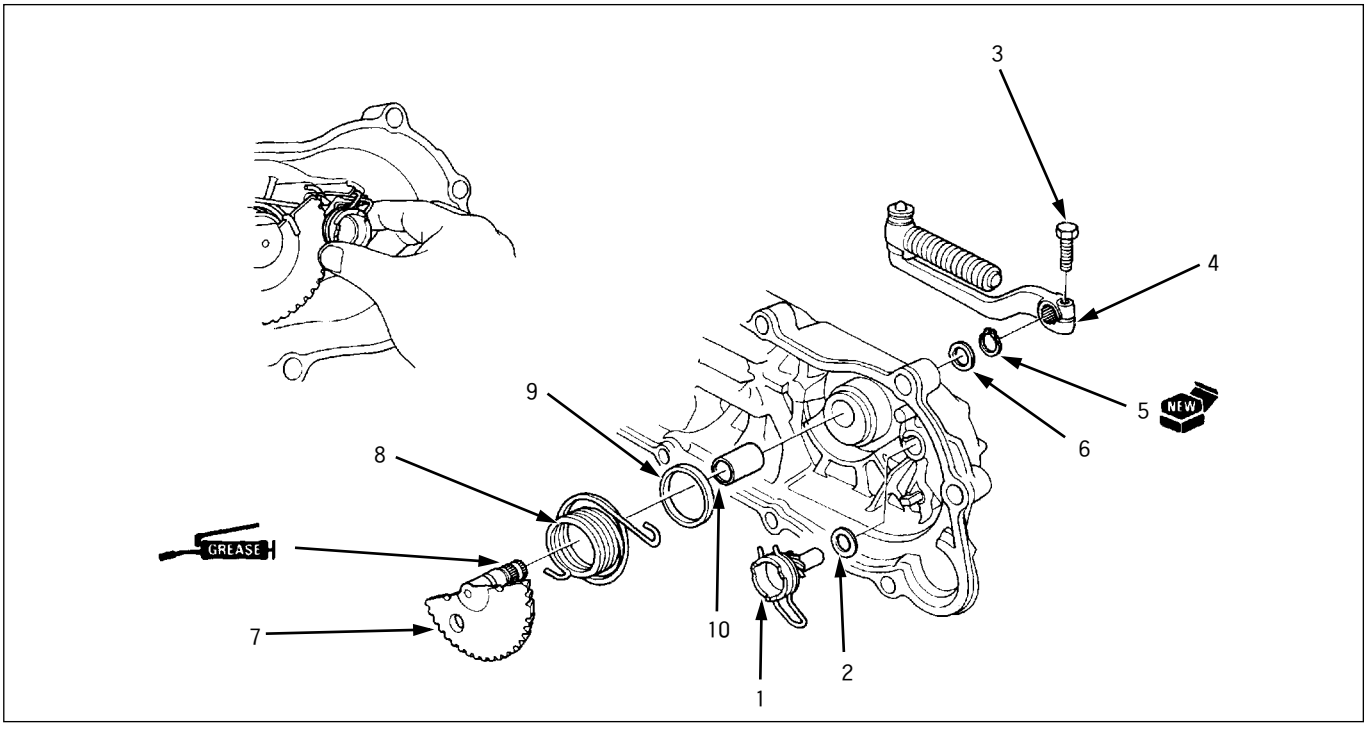
Assembly is done in reverse order of disassembly.

RELATED OPERATION

- Air cleaner case removal / installation (⇨ 4 - 4)
- Frame body cover (⇨2 - 5)

	OPERATION / PART NAME	NUMBER	REMARK
1	6mm Special bolts	7	CAUTION Assemble the bolts of length to same.
2	Bolt	1	
3	Clamp	1	CAUTION Remove the rear. brake cable clamp.
4	L. Crank case cover	1	CAUTION Remove the cooling hose from cover.
5	Knock pin	2	
6	Gasket	1	
7	8mm Special bolt	1	

KICK STARTER REMOVAL / INSTALLATION

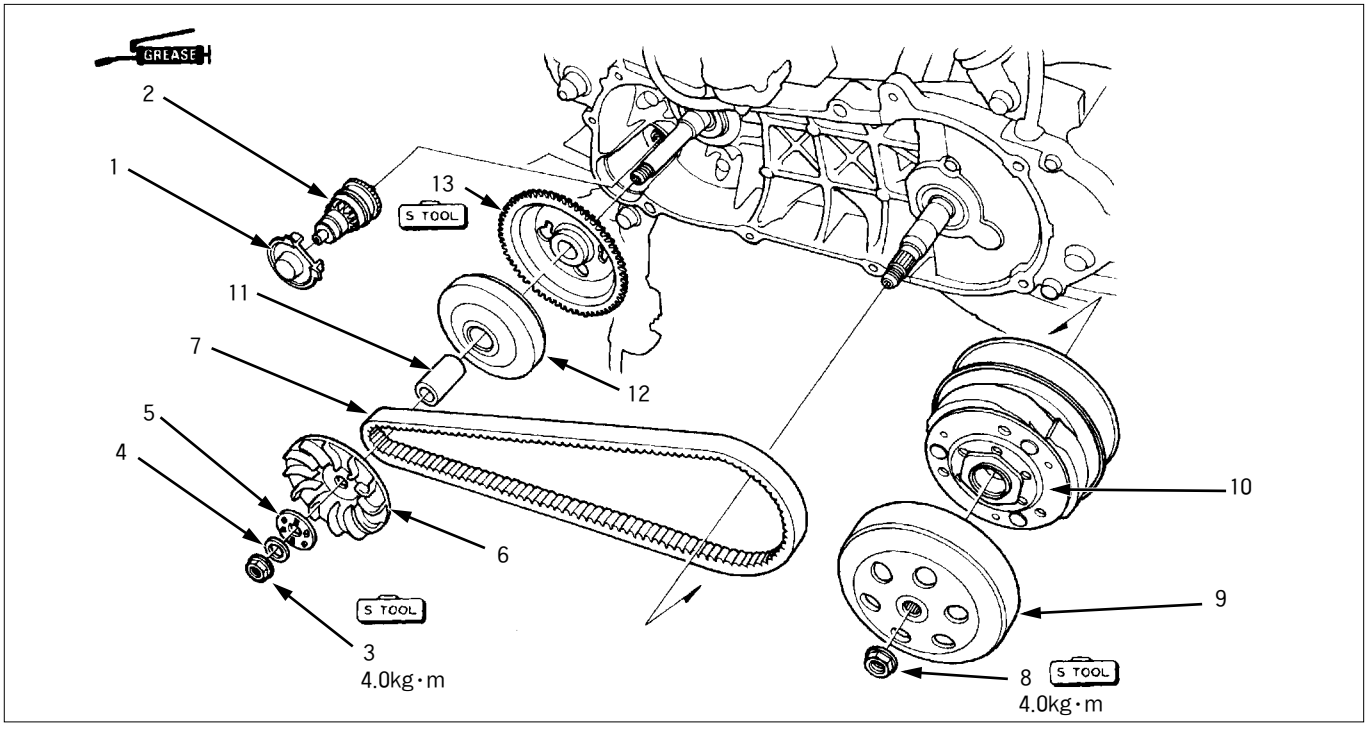


RELATED OPERATION

- L. crank case cover removal / installation (⇨7 - 2)

	OPERATION / PART NAME	NUMBER	REMARK
	Removal		
1	Kick driven gear	1	
2	Trust washer	1	CAUTION Disassemble the kick starter in assembly with rotating its pedal.
3	Bolt	1	
4	Kick starter pedal	1	
5	Snap ring	1	
6	Trust washer	1	
7	Kick starter spindle	1	
8	Kick starter return spring	1	
9	Gear box collar	1	
10	Spindle bush	1	
	Installation		
10	Spindle bush	1	
9	Gear box collar	1	Push and assemble spindle by dividing it into internal and external spring with " ⊖ " driver.
8	Kick starter return collar	1	CAUTION
7	Kick starter spindle	1	
6	Trust washer	1	
5	Snap ring	1	
2	Trust washer	1	
1	Kick driven gear	1	CAUTION Insert the spring at " 凸 "part.
4	Kick starter pedal	1	
3	bolt	1	

BELT-TYPE C.V.T REMOVAL / INSTALLATION



CAUTION

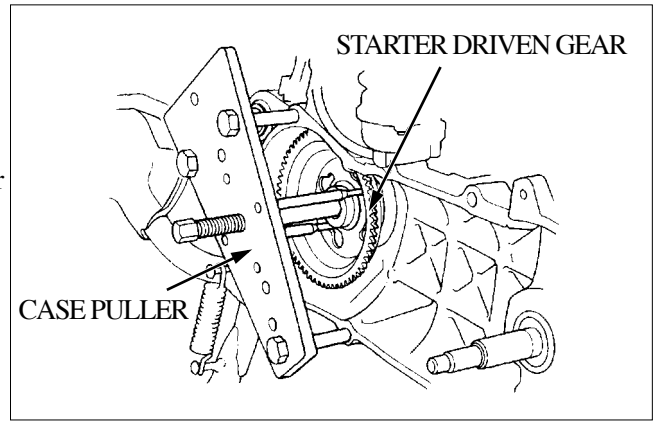
Assembly is done in reverse order as disassembly.

RELATED OPERATION

- L. crank case cover removal / installation (⇨ 7 - 2)
- Cooling fan removal / installation (⇨ 13 - 6)

	OPERATION / PART NAME	NUMBER	REMARK
	Removal		
1	Pinion holder	1	
2	Starter pinion	1	
3	nut	1	CAUTION Use a universal holder.
4	washer	1	
5	starter ratchet	1	
6	Drive face	1	
7	Drive belt	1	
8	Clutch outer nut	1	CAUTION Use a universal holder, fix the clutch outer and remove.
9	Clutch outer	1	
10	Clutch / driven pulley	1	Removal (⇨ 7-7)
11	Drive face boss	1	
12	Movable drive face	1	Removal (⇨ 7-6)
13	Starter driven gear	1	Removal / Installation (⇨ 7-5)

STARTER DRIVEN GEAR REMOVAL / INSTALLATION



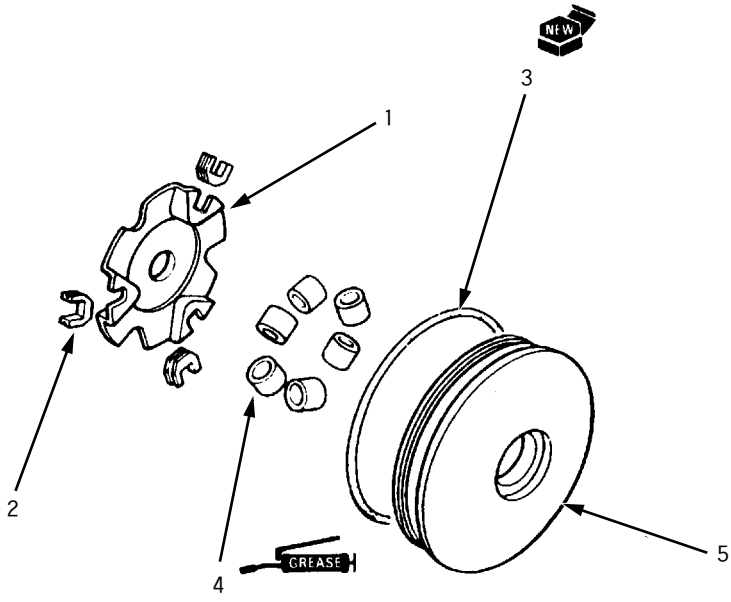
REMOVAL

Secure a case puller on the crank case and remove the starter driven gear.

S TOOL

CASE PULLER

MOVABLE DRIVE FACE DISASSEMBLY

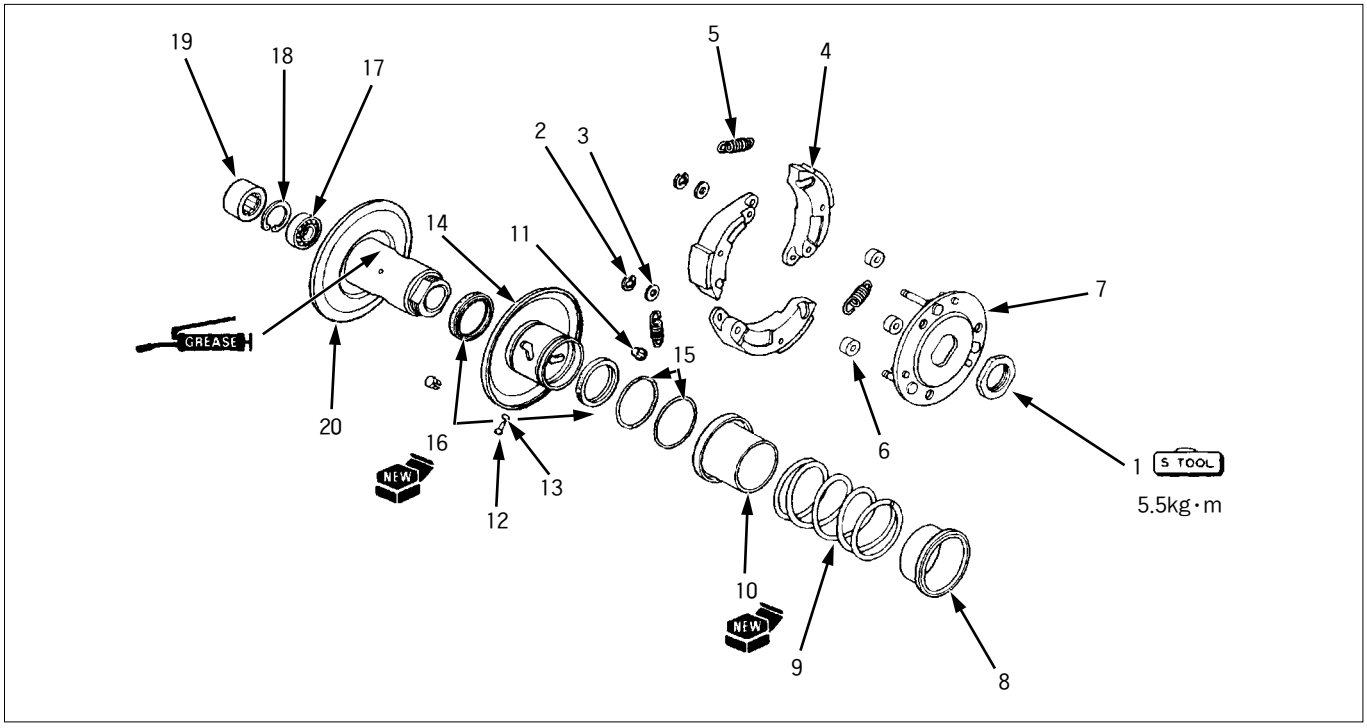


CAUTION

Assembly is done in reverse order as disassembly.

	OPERATION / PART NAME	NUMBER	REMARK
1	Ramp plate	1	
2	Slide piece	3	
3	O-ring	1	
4	Weight Roller	6	
5	Movable drive face	1	

CLUTCH / DRIVEN PULLEY DISASSEMBLY



	OPERATION / PART NAME	NUMBER	REMARK
	Disassembly		
	Clutch		
1	Driven face nut	1	CAUTION 28mm special nut.
2	Snap ring	3	
3	Washer	3	
4	Clutch shoe	3	
5	Clutch spring	3	
6	Damper rubber	3	CAUTION Exchange if damaged, worn or deformed.
7	Clutch drive plate	1	
	Driven pully		
8	Spring collar	1	
9	Driven face spring	1	
10	Seal collar	1	
11	Guide pin	3	
12	Roller guide pin	3	
13	Roller guide	3	
14	Movable driven face	1	
15	O-ring	2	
16	Oil seal	2	
17	Inner bearing	1	CAUTION Ball bearing 6901U
18	Snap ring	1	
19	Outer bearing	1	CAUTION Needle bearing 17 ×25 ×18
20	Driven face	1	

8. TRANSMISSION

CAUTION WHEN PERFORMING MAINTENANCE

- This chapter explains maintenance to the final reduction. It is possible to perform this maintenance without dismounting the engine. However, the exchange of the L. crank case side bearing is performed after the engine and the rear brake are disassembled to prevent damage to the case.
- This exchange of the drive shaft must be done with the use of special tools, and the shaft is assembled with the inner bearing and inner race securely fixed.

TROUBLESHOOTING

The engine starts ; is not possible to drive

- The transmission is damaged.
- The transmission is clogged.

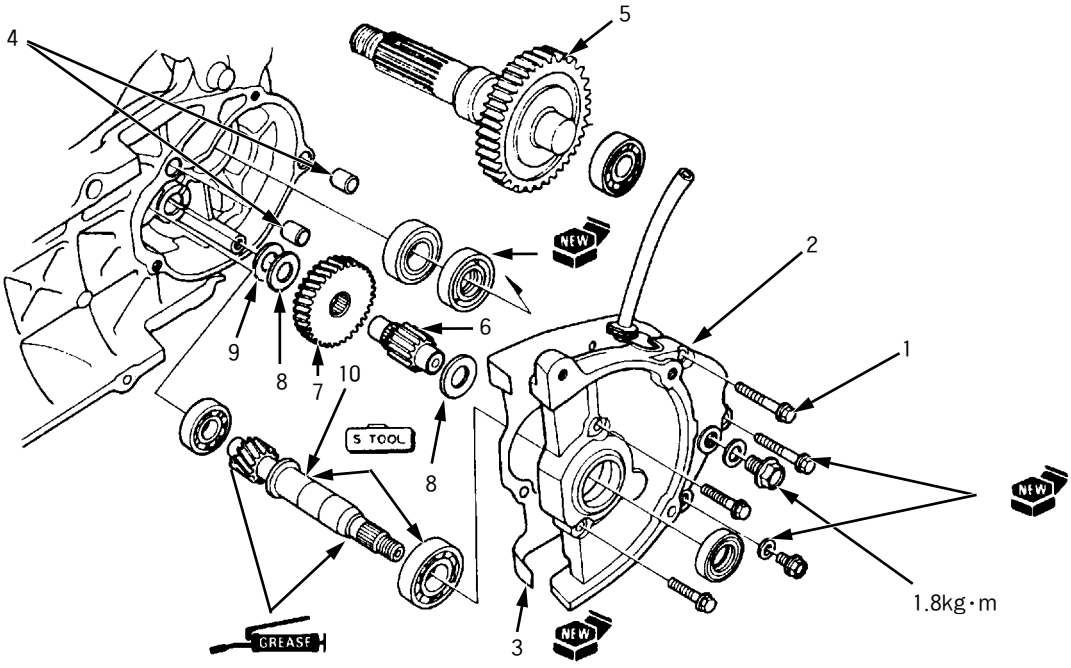
A noise when driving

- Gear is worn, clogged or damaged.
- Bearing wear, clearance.

Oil leakage

- Too much oil.
- Oil seal wear, damage.

DRIVE SHAFT / TRANSMISSION DISASSEMBLY / ASSEMBLY



CAUTION

Assembly is done in reverse order as disassembly.

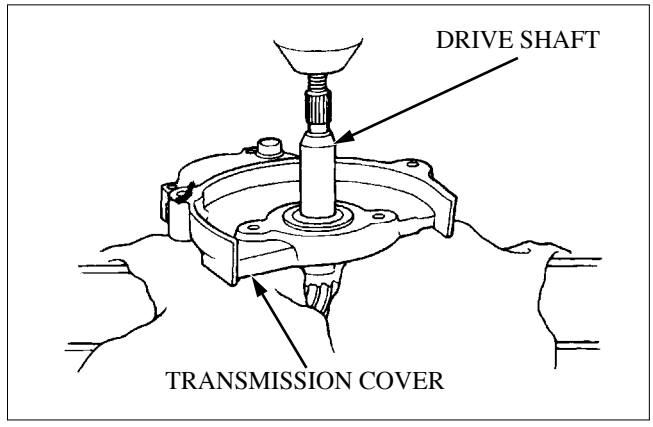
RELATED OPERATION

- Rear wheel removal / installation (⇨11-2)
- Clutch / driven pully disassembly / assembly (⇨ 7-7)

	OPERATION / PART NAME	NUMBER	REMARK
	Disassembly		
1	Bolt	4	
2	Trans mission cover	1	CAUTION remove the oil.
3	Gasket	1	
4	Knock pin	2	
5	Final gear comp	1	CAUTION Check for clogging, damage.
6	Counter shaft	1	
7	Counter shaft gear	1	CAUTION Disassemble gear from counter shaft.
8	Thrust washer - Drive shaft	2	
9	Side washer	1	
10	Drive shaft	1	

DRIVE SHAFT EXCHANGE

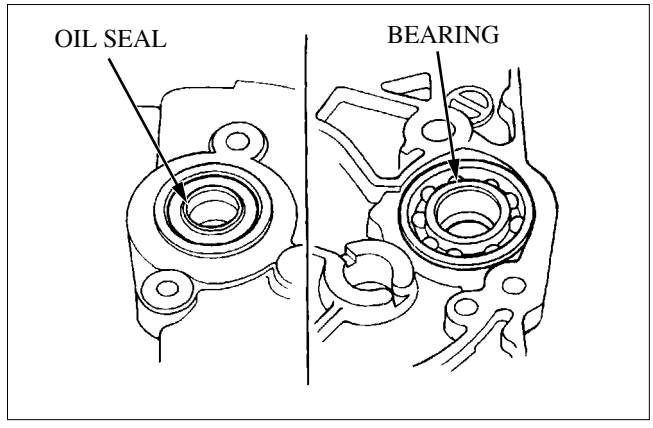
- Use a hydraulic press to disassemble the drive shaft from the transmission cover.



CAUTION

Be careful not to scratch the cover assembly face.

- Disassemble the drive shaft oil seal.
- Disassemble the bearing.



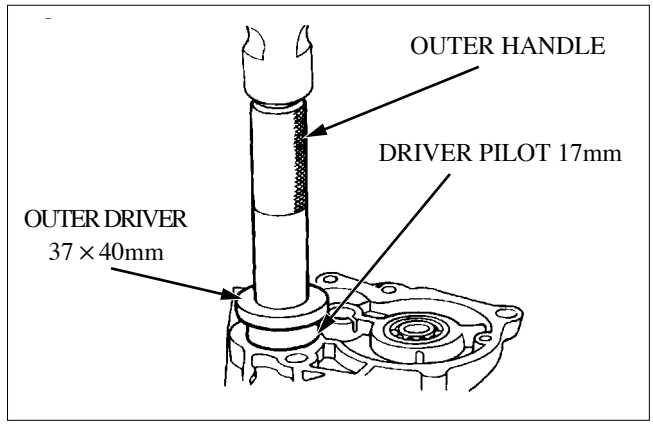
- Install a new bearing on transmission cover.

CAUTION

Make sure the mark faces outside when assembling.

S TOOL

OUTER HANDLE A
OUTER DRIVER 37 × 40mm
DRIVER PILOT 17mm

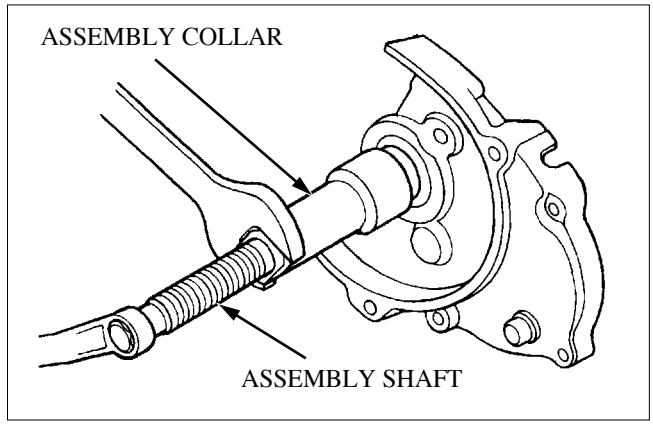


Assemble the drive shaft to the transmission cover.

S TOOL

CRANK ASSEMBLY SHAFT
CRANK ASSEMBLY COLLAR

- Use a new drive shaft oil seal when assembling.



MEMO

9. CRANKCASE, CRANKSHAFT

CAUTION WHEN PERFORMING MAINTENANCE

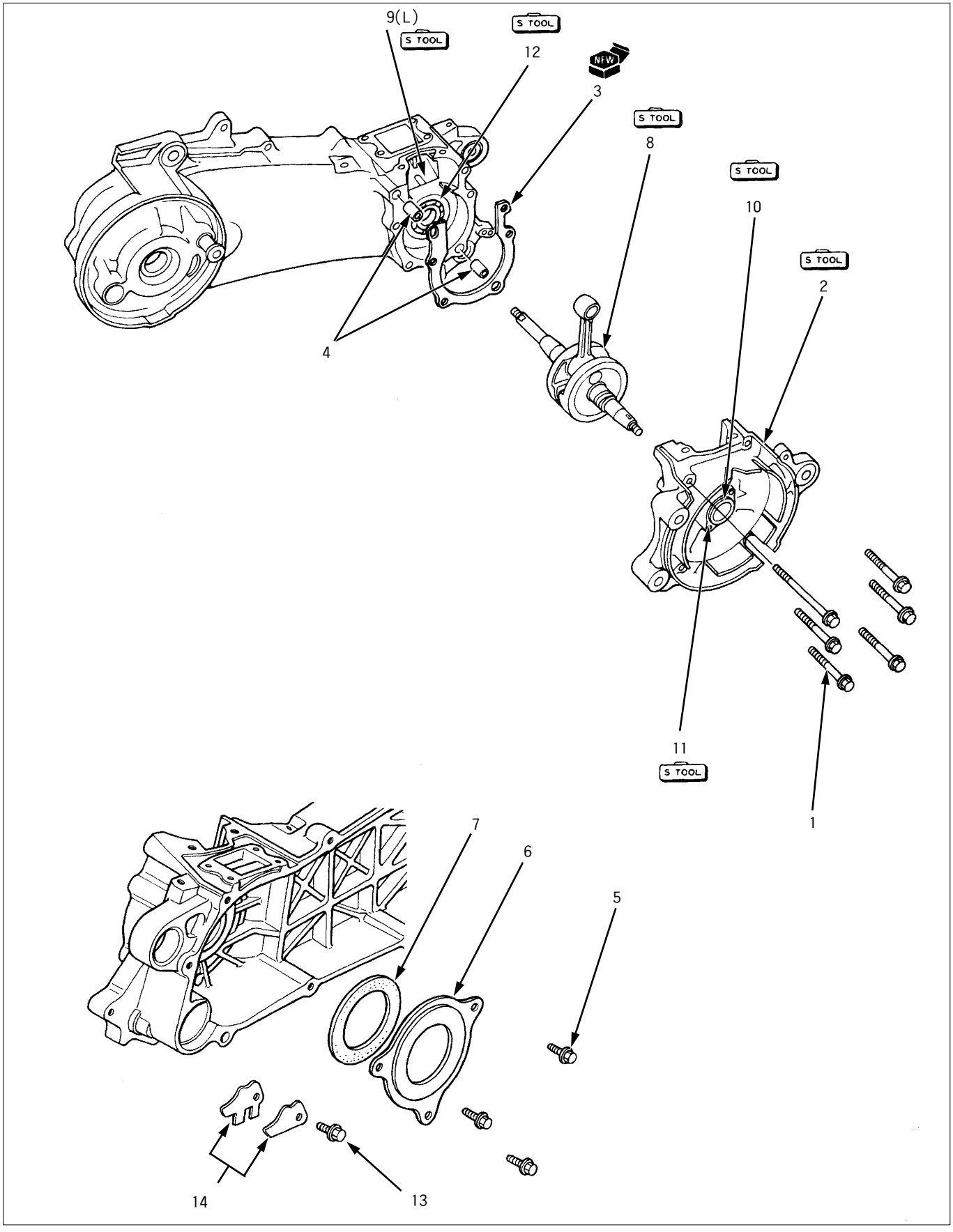
- This chapter explains the crankcase disassembly operation for maintenance related to the crankshaft.
- Before disassembling the crankcase, the following parts must be disassembled first. Refer to the listed chapters when disassembling.
  - Oil pump(⇒ chapter 3)
  - Carburetor(⇒ chapter 4)
  - Reed Valve(⇒ chapter 4)
  - Engine(⇒ chapter 5)
  - Cylinder Head, Cylinder, piston(⇒ chapter 6)
  - AC Generator(⇒ chapter 13)
  - Drive face(⇒ chapter 7)
  - Clutch/Driven Pulley(⇒ chapter 7)
- When replacing the L. Crankcase, the following disassembly operation must be performed first. Refer to the listed chapters when disassembling.
  - Transmission(⇒ chapter 8)
  - Rear Brake(⇒ chapter 11)
- When assembling the crankcase and crank shaft, use a specialized tool which matches with the crankshaft bearing inner race to pull the crankshaft. When disassembling, make sure to remove the bearing in the crankshaft and place a new bearing in the case side, and after assembly, replace a new oil seal.

TROUBLESHOOTING

Engine noise

- Clearance in the connecting rod large end portion/ small end portion bearing.
- Clearance in the crankshaft bearing.

CRANKCASE DISASSEMBLY / ASSEMBLY



RELATED OPERATION

- Engine removal/installation(⇒chapter 5)
- Clutch/driven pully removal/installation(⇒ chapter 7)
- Drive face removal(⇒ chapter 7)
- AC generator removal/installation(⇒ chapter 13)

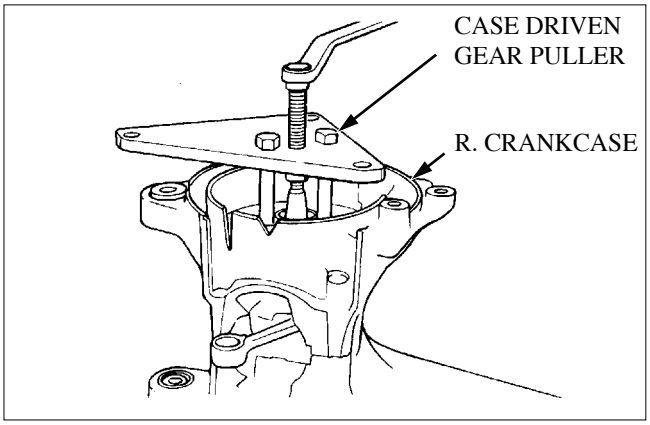
	OPERATION/PART NAME	NUMBER	REMARK
	Disassembly		
1	Crankcase connecting bolt	6	
2	R. crankcase	1	disassembly(⇨ 9-4)
3	Gasket	1	disassembly(⇨ 9-4)
4	Knock pin	2	
5	Flange bolt	3	
6	Silent plate	1	
7	Silent rubber	1	
8	Crankshaft	1	
9	L. oil seal	1	
10	R. oil seal	1	disassembly(⇨ 9-4)
11	R. bearing	1	
12	L. bearing	1	
13	Flange bolt	1	
14	Case cover comp	1	
	Assembly		
12	L. bearing	1	Assembly(⇨ 9-4)
11	R. bearing	1	
8	Crankshaft	1	Assembly(⇨ 9-4)
9	L. oil seal	1	Assembly(⇨ 9-4)
14	Case cover comp	1	
13	Flange bolt	1	
7	Silent Rubber	1	
6	Silent plate	1	
5	Flange bolt	3	
4	Knock pin	2	
3	Gasket	1	
2	R. crankcase	1	Assembly(⇨ 9-5)
10	R. oil seal	1	Assembly(⇨ 9-5)
1	Crankcase connection Bolt	6	

CRANKSHAFT REMOVAL

Secure a case puller on the R. crankcase and remove the R. crankcase from the L. crankcase.

S TOOL

CASE PULLER



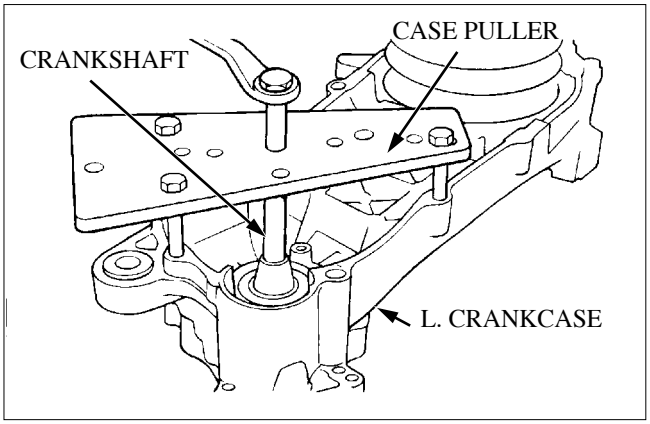
Secure a case puller on the L. crankcase and remove the crankshaft the L. crankcase.

CAUTION

Do not force to disassemble by pounding on the crankshaft.

S TOOL

CASE PULLER



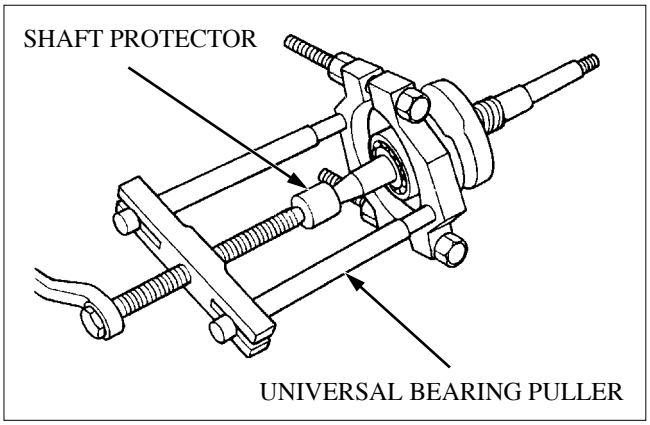
Use a bearing puller to remove bearing from the crank shaft. Remove the oil seal from the R. and L. crankcase.

CAUTION

Replace with a new oil seal when disassembling the crankcase.

S TOOL

UNIVERSAL BEARING PULLER
SHAFT PROTECTOR



CRANKSHAFT INSTALLATION

Clean the crankcase using cleansing oil, check for crack and damage to each area.

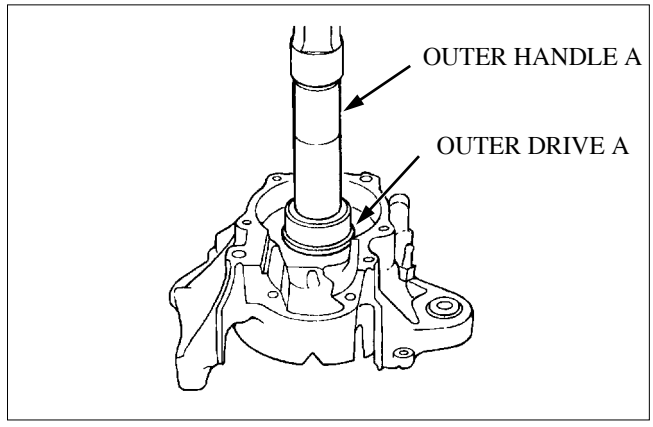
CAUTION

- Apply oil to the radial ball bearings and the connecting rod large end portion.
- After thoroughly removing the liquid gasket from the joining face, mend the scratched areas using an oil stone.

Place new bearings in R. crankcase.

S TOOL

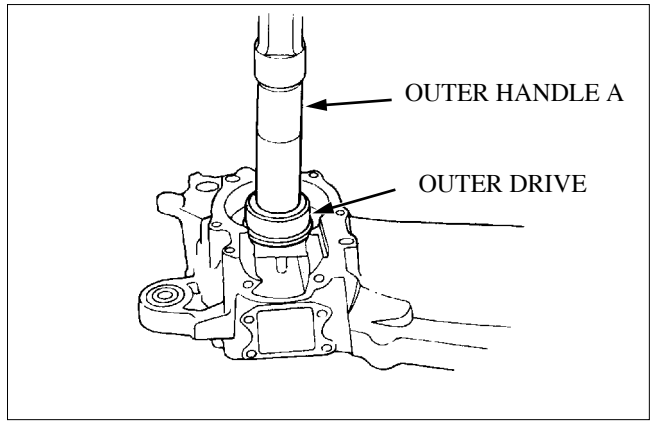
OUTER HANDLE A
OUTER DRIVER 52 ×55mm
DRIVER PILOT 20mm



Place new bearings in L. crank case.

S TOOL

OUTER HANDLE A
OUTER DRIVER 52 ×55mm
DRIVER PILOT 20mm



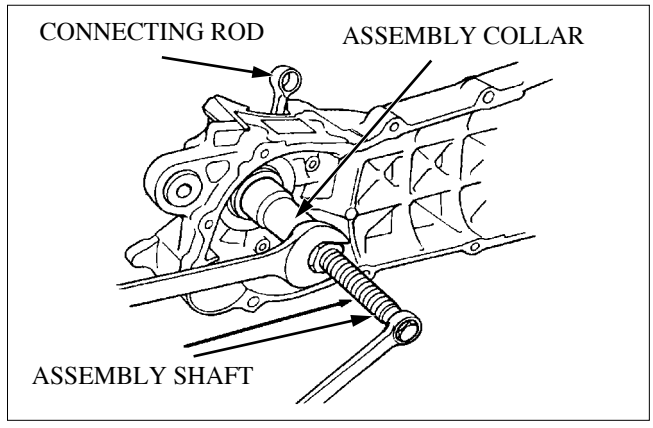
Assemble the crankcase to the L. crankcase.

CAUTION

- Apply 2cycle oil to the redial ball bearings and the connecting rod large end portion.
- Assemble not to interfere with the case with being careful of connecting rod location.

S TOOL

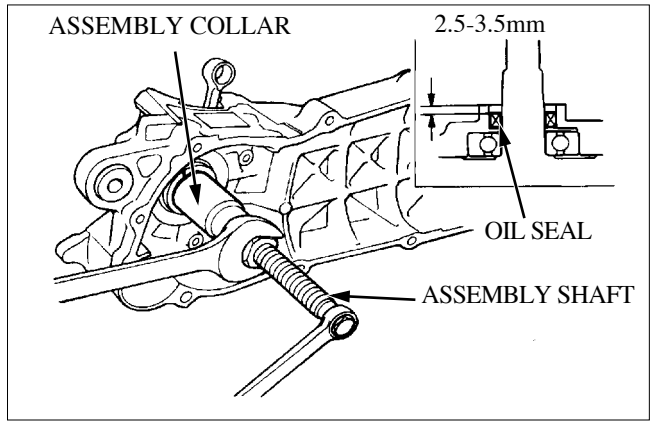
CRANK ASSEMBLY COLLAR
CRANK ASSEMBLY SHAFT



Place a new oil seal in the crankcase end portion at a 2.5 ~ 3.5mm depth.

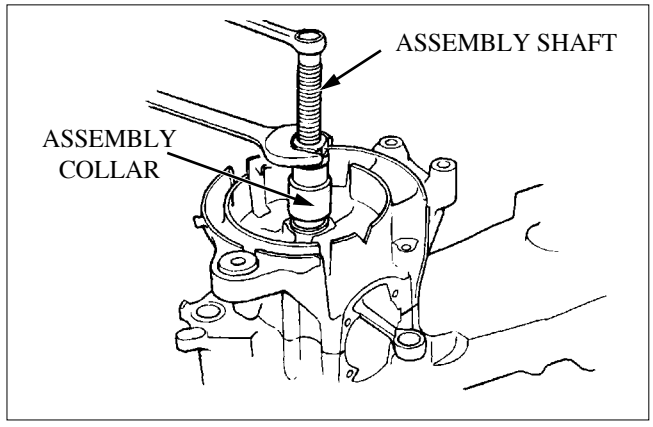
S TOOL

CRANK ASSEMBLY COLLAR
CRANK ASSEMBLY SHAFT



CRANKCASE ASSEMBLY

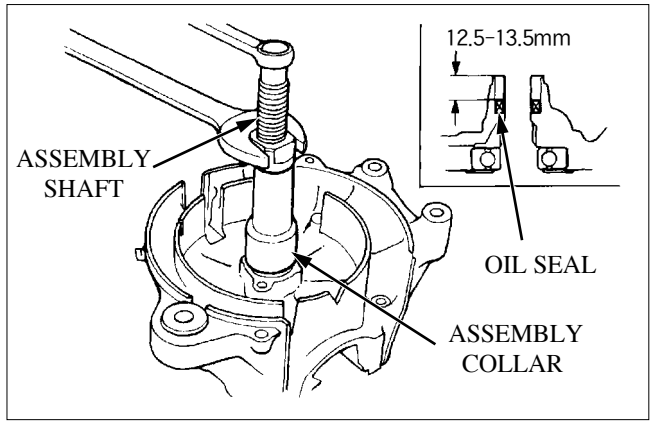
Apply a liquid gasket to the L.
crankcase joining face, assemble knock pins.
Assemble the R. crankcase.



S TOOL

CRANK ASSEMBLY COLLAR
CRANK ASSEMBLY SHAFT

Place a new L. oil seal in the crankcase end portion at 12.5~13.5mm depth.



S TOOL

CRANK ASSEMBLY COLLAR
CRANK ASSEMBLY SHAFT

MEMO

10. FRONT WHEEL, STEERING

CAUTION WHEN PERFORMING MAINTENANCE

- See chapter13 for maintenance and inspection of lights, meter, and switches.

TROUBLESHOOTING

Heavy steering handle

- Steering top cone lace is tightened too tightly.
- Steering step ball is damaged.
- Damage to steering ball race, cone race.
- Low tire pressure.
- Tire wear.

Steering handle turns to one side

- Fork is bent.
- Front axle is bent.
- Frame is bent.
- Uneven tire wear and bending.
- Wheel bearing wear.

Wheel rotation not smooth

- Wheel bearing damage.
- Brake is sticking.

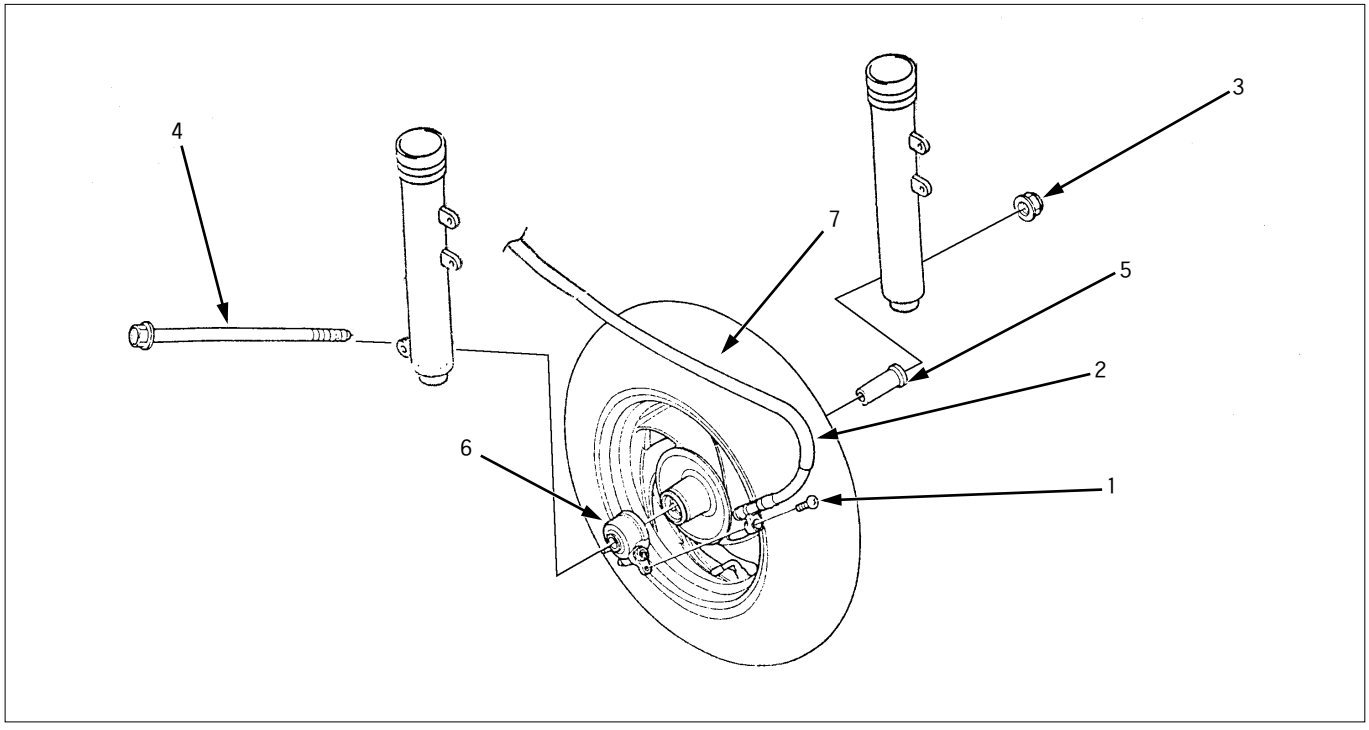
Weak front suspension

- Weak spring.

Noise from front cushion

- Catching on cushion case.
- Cushion connecting portion is loose.

FRONT WHEEL REMOVAL / INSTALLATION



CAUTION

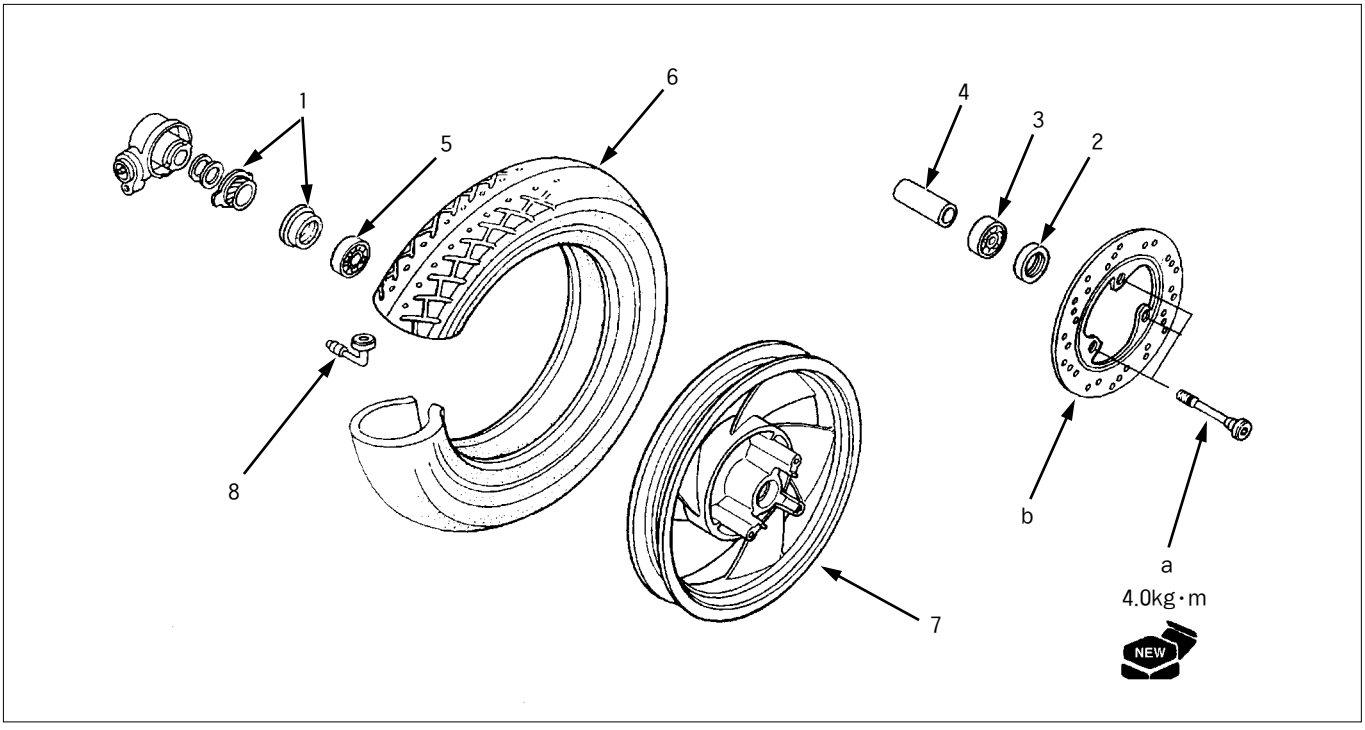
Do not allow oil to contact brake disk or not to reduce braking capability. If oil does come into contact with these parts, replace the pad and clean the disk.

CAUTION

- Assembly is done in reverse order of disassembly.
- Make sure that the vehicle body is well supported when removing the front wheel.

	OPERATION / PART NAME	NUMBER	REMARK
	Disassembly		
1	Speedometer gear box screw	1	
2	Speedometer cable	1	
3	Front axle nut	1	
4	Front axle	1	
5	Front brake collar	1	
6	Speedometer gear box	1	
7	Front wheel ass'y	1	

FRONT WHEEL DISASSEMBLY / ASSEMBLY



CAUTION

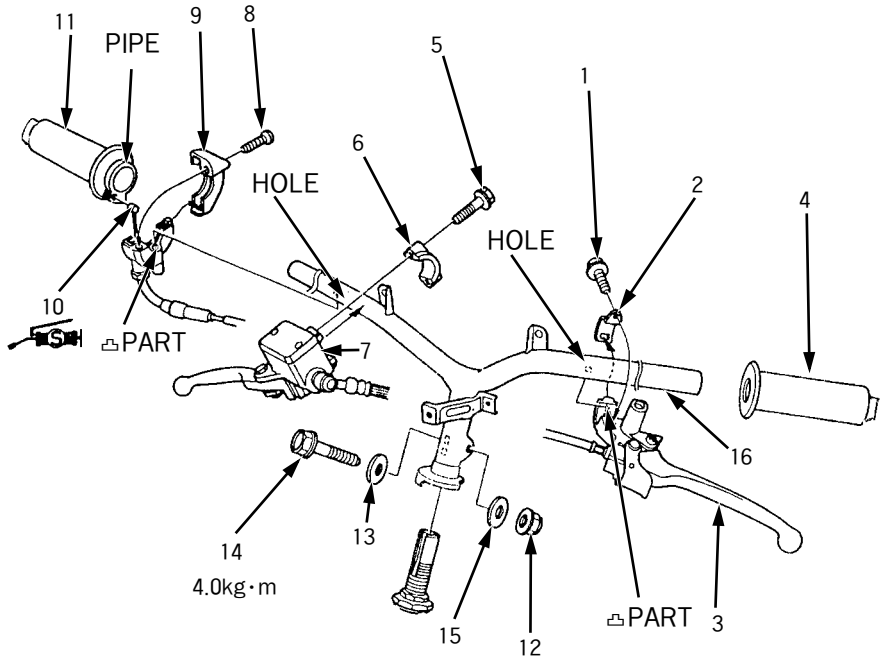
Assembly is done in reverse order of disassembly.

RELATED OPERATION

- Front wheel disassembly / assembly

OPERATION / PART NAME		NUMBER	REMARK
	Disassembly		
1	Speedo meter gear seal / gear	1/1	
2	Dust seal	1	
3	L. wheel bearing	1	
4	Distance collar	1	
5	R. wheel bearing	1	
6	Tire	1	
7	Cast wheel	1	
8	Rim valve	1	
a	Disk bolt	3	
b	Brake disk	1	
	Assembly		
	(8 ⇨ 1)		CAUTION Replace wheel bearing by set place L. bearing at frist.
	(b ⇨ a)		CAUTION Face the mark side toward outside when assembling.

STEERING HANDLE REMOVAL / INSTALLATION



RELATED OPERATION

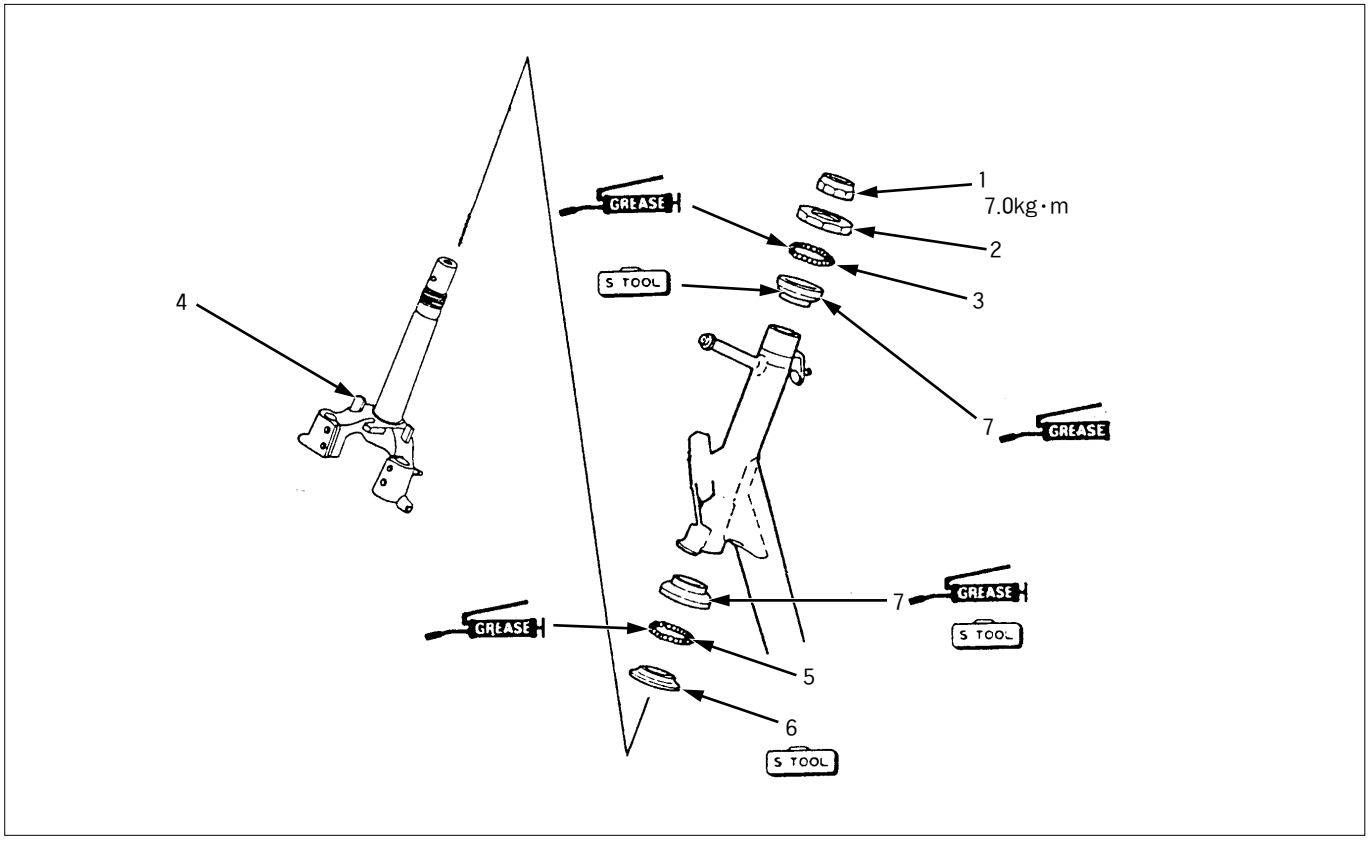
● Handle cover removal

	OPERATION / PART NAME	NUMBER	REMARK
	Rear brake lever		
1	Bolt	1	
2	Rear brake lever holder	1	
3	Rear brake lever	1	CAUTION Remove the rear brake cable from lever, insepct the rear brake.
4	L. grip		
	Front master cylinder / brake lever		
5	Bolt	2	
6	Master cylinder holder	1	
7	Master cylinder	1	
	Throttle housing		
8	Screw	1	
9	Upper throttle housing	1	
10	Throttle cable	1	CAUTION Remove the throttle from throttle grip pipe part.
11	R. throttle grip	1	CAUTION do not a bent or damage for the throttle cable.
	Steering handle		
12	Nut	1	
13	Washer	1	
14	Handle join bolt	1	
15	Washer	1	
16	Steering handle	1	

• Handle cover assembly

	OPERATION / PART NAME	NUMBER	REMARK
	(16⇨ 1)		
16	Steering handle	1	CAUTION Match the handle '凸'part with the step pipe groove assembling.
10	Throttle cable	1	CAUTION Inspect the throttle grip of free play.
9	Upper throttle housing	1	CAUTION Match the housing '凸'part with the upper throttle housing groove, and loosen the washer screw .
2	Rear brake lever holder	1	CAUTION Match the holder groove with the lever '凸' part, and loosen the bolt.

STEERING STEM DISASSEMBLY / ASSEMBLY



RELATED OPERATION

- Front fender removal / installation(⇨ 2-7)
- Front wheel removal / installation(⇨ 10-2)
- Steering handle removal / installation(⇨ 10-4)
- Front brake caliper removal / installation(⇨ 12-3)

	OPERATION / PART NAME	NUMBER	REMARK
	Removal		
	Front fork		
1	Stem lock nut	1	
2	Top cone race	1	
3	Upper steel ball	26	
4	Steering stem comp	1	
5	Lower steel ball	29	
6	Bottom cone race	1	
7	Ball race	2	
	Installation		
	(7 ⇨ 1)		
5	Lower steel ball	29	⚠CAUTION Do not lose a attention.
3	Upper steel ball	26	⚠CAUTION Do not lose a attention.
2	Top cone race	1	⚠CAUTION Tighten lightly and ratate about $\frac{1}{8}$ backwards.

MEMO

11. REAR WHEEL, BRAKE, SUSPENSION

CAUTION WHEN PERFORMING MAINTENANCE

⚠CAUTION

- So that brake capability is not reduced, make sure that oil dose not come into contact with the brake drum or lining face. If oil dose contact these parts wipe off the drum and replace.

TROUBLESHOOTING

Shaking of rear wheel shakes

- Wheel rim is bent.
- Tire is damaged.
- Axle is tightened improperly.
- Improper tire pressure.
- Wheel is not balanced.

Weak rear cushion

- Damaged spring.
- Rear damper is damaged, leaking oil.

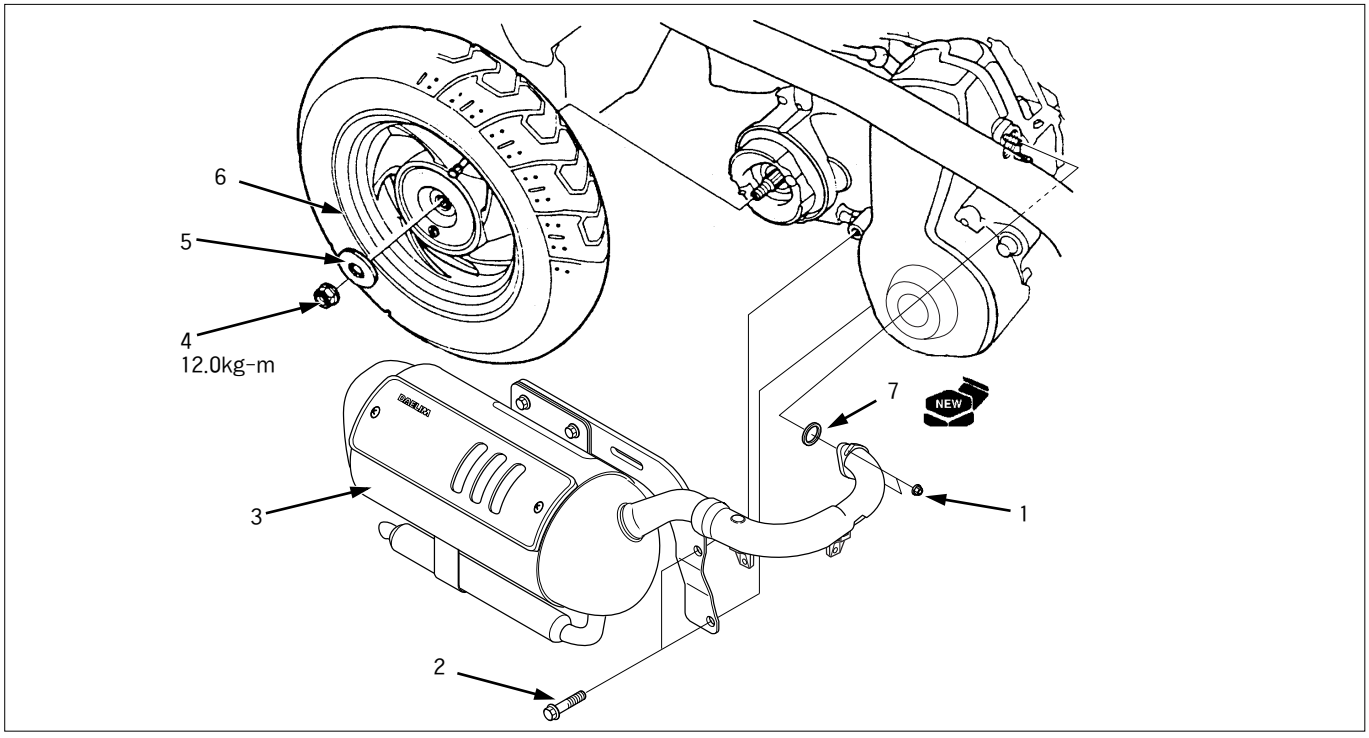
Rear cushion noise

- Caught in cushion case.
- Assembly portion has become loose.

Rear cushion hard

- Damper rod is bent.
- Improper tire air pressure.

REAR WHEEL REMOVAL / INSTALLATION



CAUTION

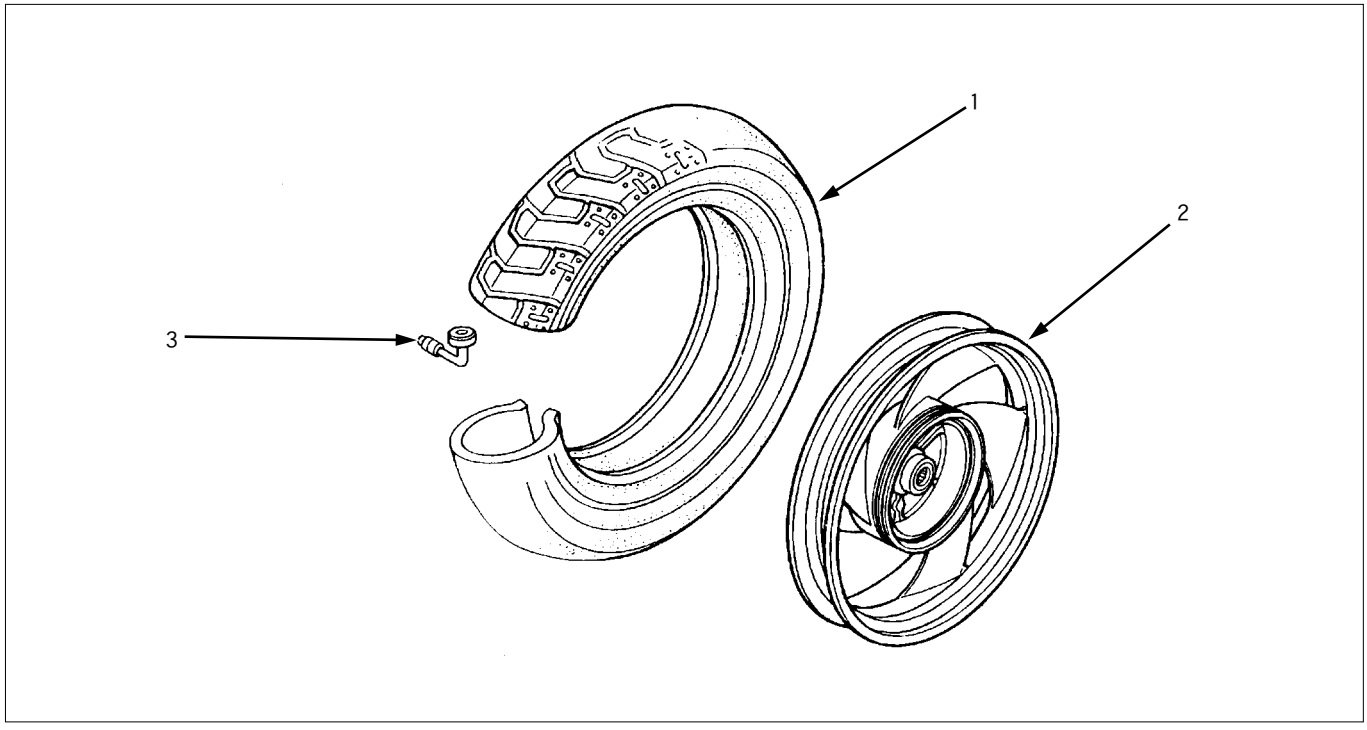
Assembly is done in order of disassembly.

RELATED OPERATIONS

• Luggage box removal / installation (⇨2-5)

	OPERATION / PART NAME	NUMBER	REMARK
1	Joint nut	2	
2	Flange bolt	2	
3	Exhaust muffler	1	
4	Rear axle nut	1	
5	Washer	1	
6	Rear wheel	1	
7	Gasket	1	

REAR WHEEL DISASSEMBLY / ASSEMBLY



CAUTION

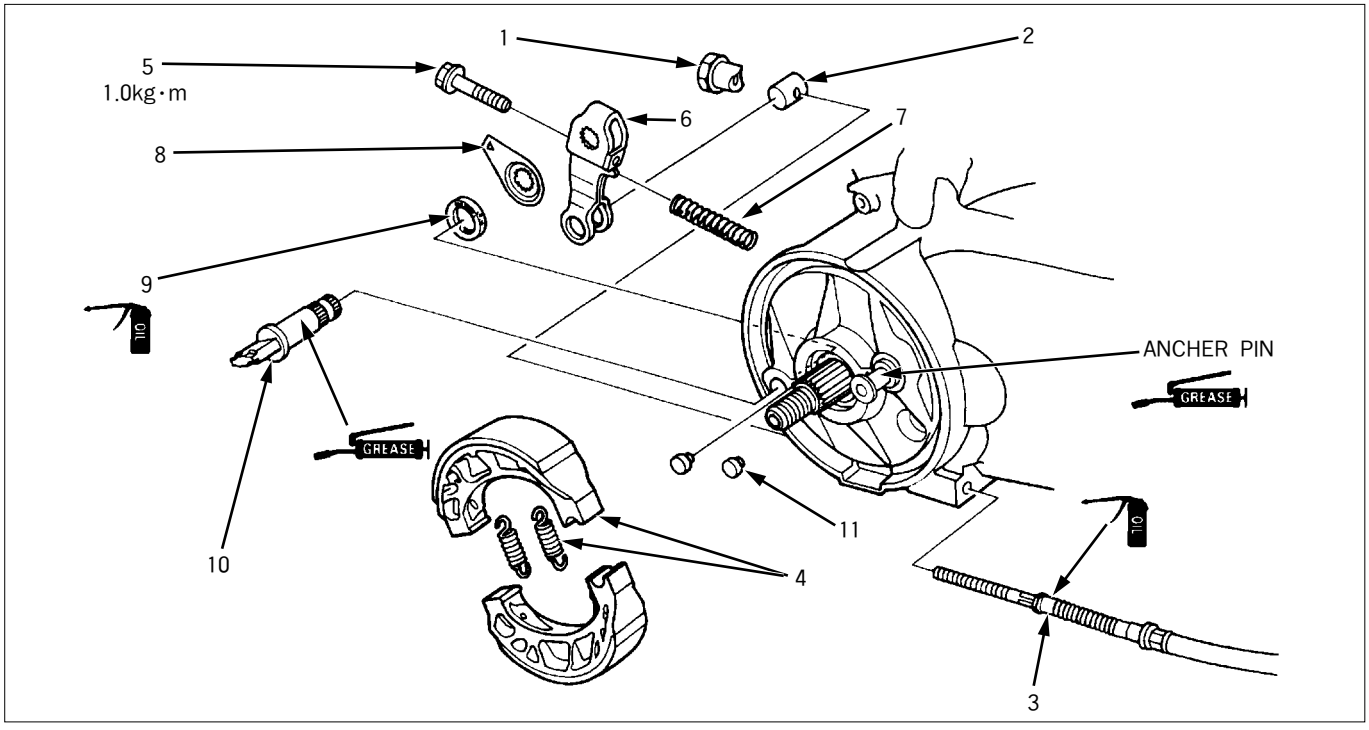
- Assembly is done in reverse order of disassembly.
- Rear brake disassembly/assembly. (⇨11-4)

Related operations

- Rear wheel disassembly

	OPERATION / PART NAME	NUMBER	REMARK
	Disassembly		
1	Rear tire	1	
2	Casting wheel	1	
3	Rim valve	1	

REAR WHEEL DISASSEMBLY / ASSEMBLY



CAUTION

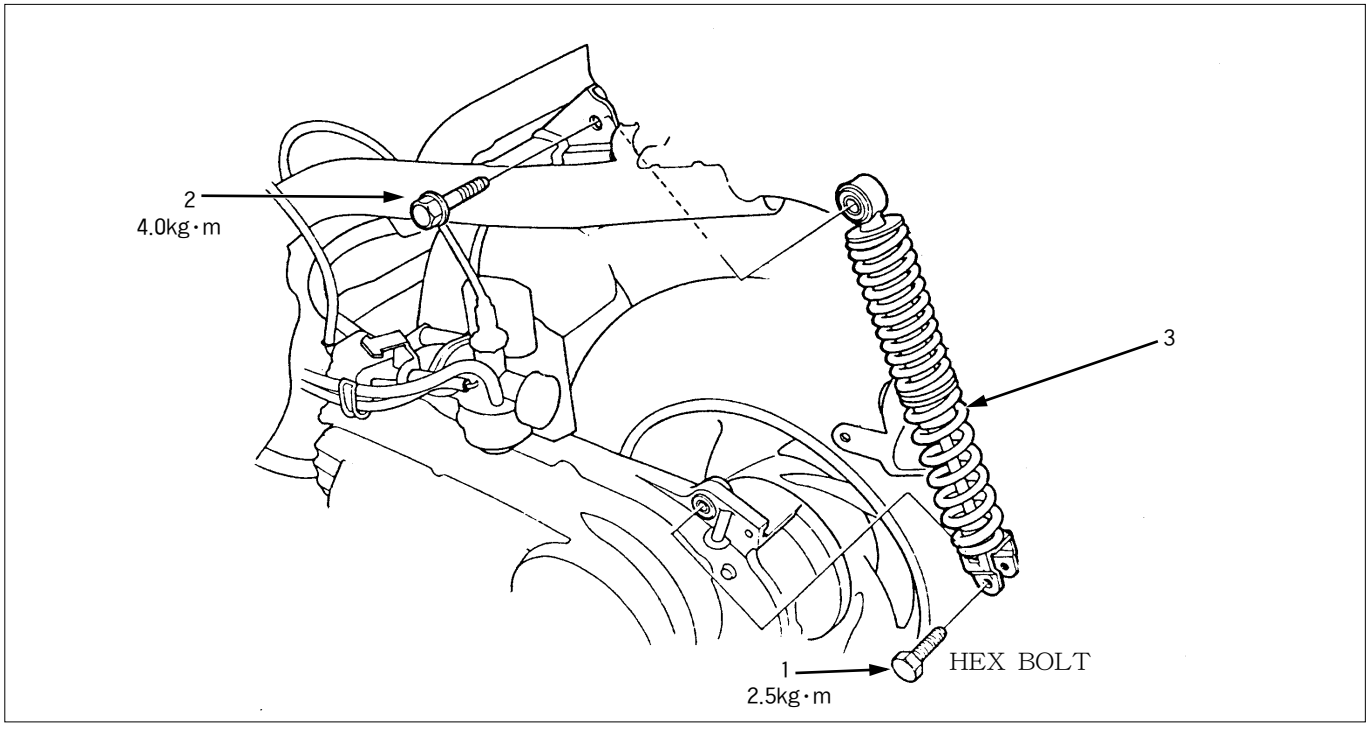
Assemble is done in reverse order of disassemble.

RELATED OPERATION

• Rear wheel Removal / Installation

	OPERATION / PART NAME	NUMBER	REMARK
	Disassembly		
1	Rear brake axle nut	1	
2	Brake arm joint	1	
3	Rear brake cable	1	CAUTION Check if booth of rear brake cable is securely assembled during assembly.
4	Brake shoe/ Shoe spring	2/2	
5	Flange blot	1	
6	Brake arm	1	
7	Return spring	1	
8	Wear indicator	1	
9	Cam dust seal	1	
10	Brake cam	1	
11	Shoe stopper rubber	2	

REAR CUSHION REMOVAL / INSTALLATION



CAUTION

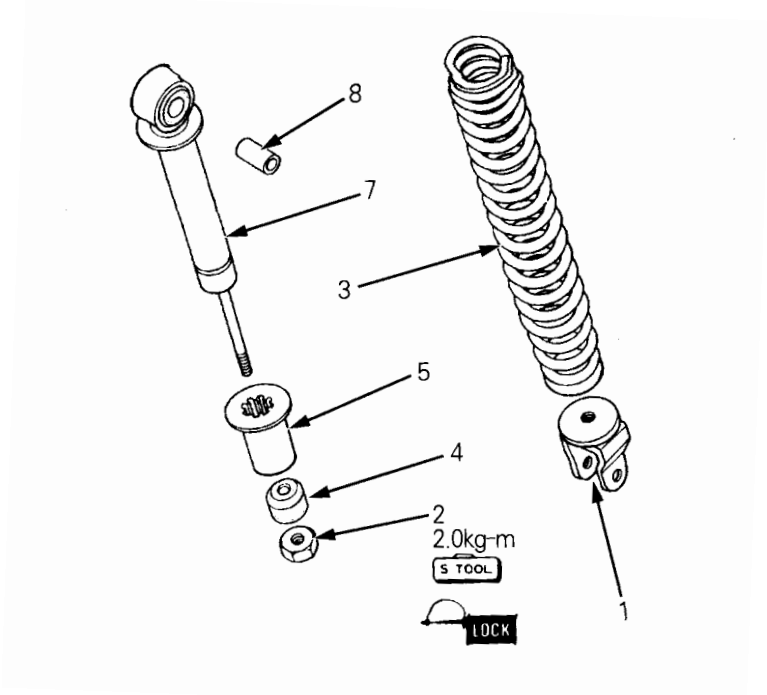
- Assemble is done in reverse order of disassemble.
- mark sure that frame is securely supported.

RELATED OPERATION

- Luggage box removal / installation

	OPERATION / PART NAME	NUMBER	REMARK
	Disassembly		
1	Hex bolt	1	
2	Flange bolt	1	
3	Rear cushion Ass'y	1	Disassembly (⇨11-6)

REAR CUSHION DISASSEMBLY / ASSEMBLY



CAUTION

Assembly is done in reverse order of disassembly.

RELATED OPERATION

• Rear Cushion Removal / Installation (⇨11-5)

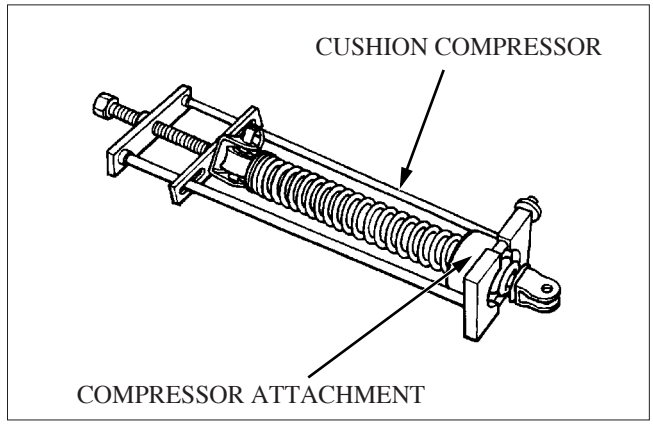
	OPERATION / INSTALLATION	NUMBER	REMARK
	Disassembly		
1	Bottom metal	1	Disassembly (⇨ 11-7) loosen the lock nut
2	Lock nut	1	
3	Spring	1	CAUTION Assemble it so that the narrow side of pith may be orented upward during assembly.
4	Stopper	1	
5	Spring guide	1	
6	Damper comp	1	
7	Rubber bush	1	

DISASSEMBLY / ASSEMBLY

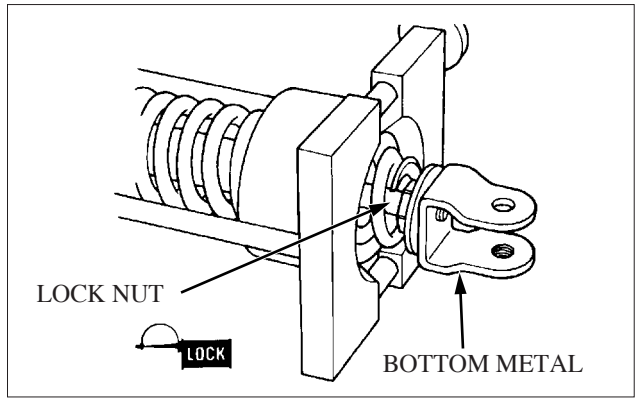
Install the compressor attachment.
Install the cushion for cushion compressor, compress spring.

S TOOL

REAR CUSHION COMPRESSOR ATTACHMENT
REAR COMPRESSOR
COMPRESSOR SCREW ASS'Y



- Fix the bottom metal, and loosen the lock nut.
- Remove the bottom metal.
- Disassemble the lock nut, bottom metal, stopper rubber spring, spring guide from damper comp.
- Remove the bottom metal.
- Assembly is done in reverse order of disassembly.



12. BRAKE SYSTEM (FRONT DISK BRAKE)

CAUTION WHEN PERFORMING MAINTENANCE

CAUTION

- Do not allow foreign materials or water to enter brake master cylinder when filling with brake fluid.
- Use only recommended brake fluid.
- Do not re-use contaminated oil.
- Brake fluid damages paint, plastic and rubber. Do not allow brake fluid to contact these materials.
- Do not re-use sealing washer.
- Cleanse the disassembled parts with brake fluid, and using compressed air, check to see if any of the passageways are blocked.
- When disconnecting or connecting the brake hose connection part, if air is found mixed in this part, remove the air by using a hydraulic system.

TROUBLESHOOTING

Breaking power is bad

- Air has entered the brake system.
- Deteriorated brake fluid by mositure.
- Contamination on brake pad and disk.
- Caliper piston seal wear.
- Master cylinder piston seal wear.
- Brake pad wear.
- Contamination on inside of caliper.
- Uneven brake pad, disk wear.
- Insufficient brake fluid.
- Blocked brake fluid passageway.
- Bent and deformed disk.
- Caliper piston sticking, wear.
- Master cylinder piston sticking, wear.
- Disk wear.
- Contamination in master cylinder.
- Bent lever.
- Caliper side damaged.

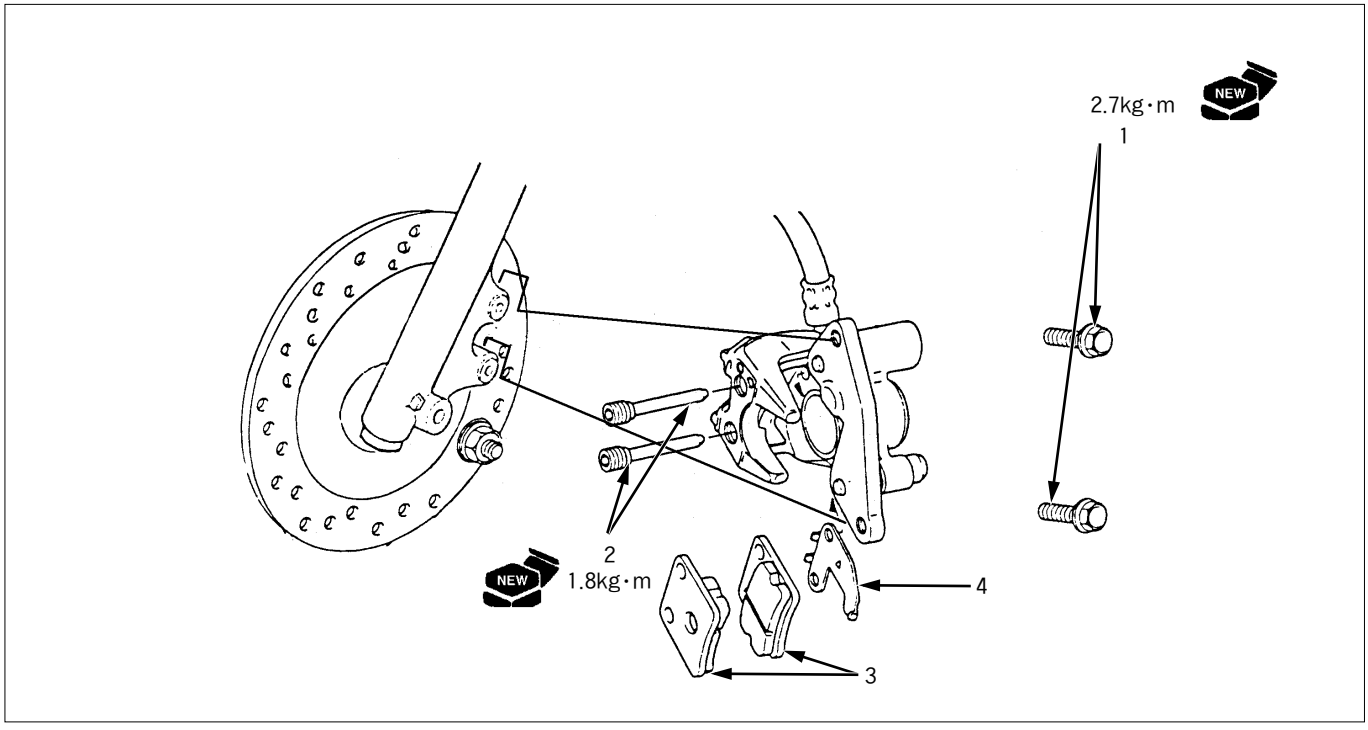
Brake lever feels heavy or does not spring back well

- Brake hydraulic system blocked.
- Caliper piston sticking.
- Blocked brake fluid passageway.
- Caliper piston seal wear.
- Master cylinder piston sticking, wear.
- Bent lever.
- Caliper side damaged.

Brake sticking (The brake pad is wearing unevenly)

- Contamination on brake pad, disk.
- Incorrect wheel alignment.
- Uneven wear of brake pad, disk.
- Bent and deformed disk.
- Blocked hydraulic line in caliper.

BRAKE PAD REPLACING



CAUTION

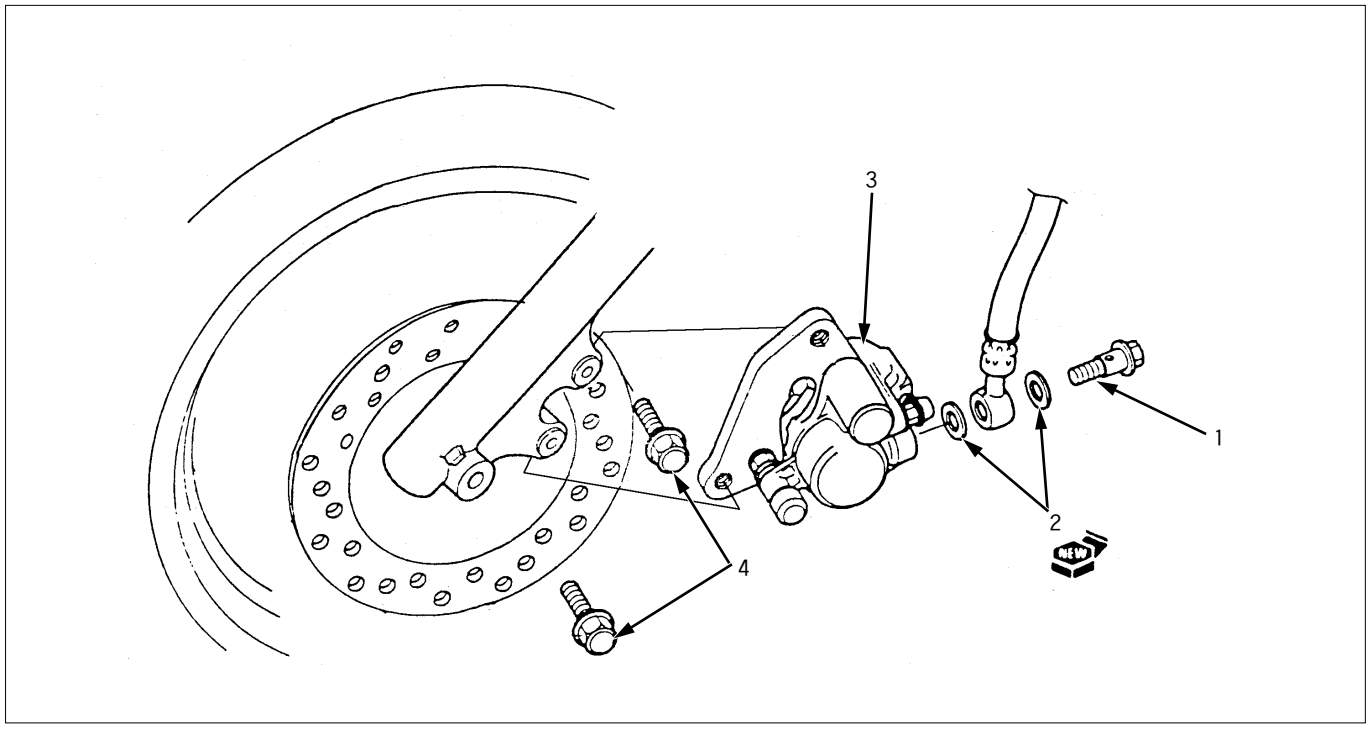
- Do not allow oil to make contact with the disk or panel as this reduces braking capability. If this happens, replace the pad and clean brake disk.
- After replacing the brake pad and disassembling the caliper, operate the lever remove the piston to the out.

CAUTION

- When replacing brake pads, replace whole set.
- Do not operate the brake lever when replacing brake pads.

	OPERATION / PART NAME	NUMBER	REMARK
	Assembly		Assembly is done in reverse order of disassembly.
1	Flange bolt 8 ×20	2	CAUTION Do not allow clliper to hang from the hose during disassembly.
2	Hanger pin	2	
3	Brake pad	2	Before assembling, check to see the spring is securely fixed.
4	Pad seam	1	Assemble to brake tightly.

BRAKE CALIPER REMOVAL / INSTALLATION



⚠CAUTION

Do not allow oil make contact with the disk or panel as this reduces braking capability. If this happens, replace the pad and clean brake disk.

CAUTION

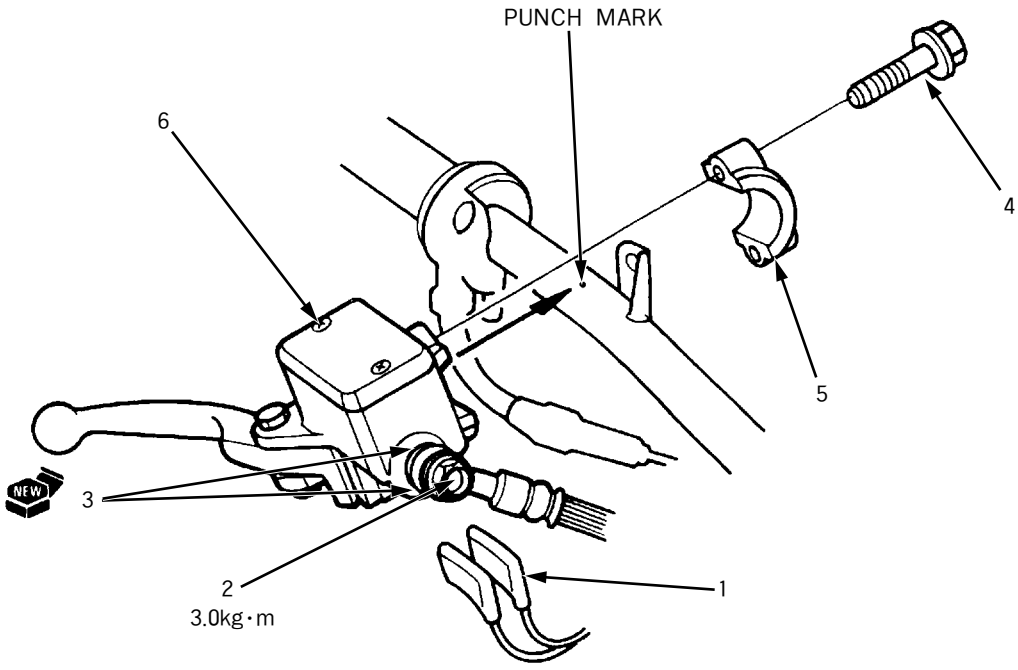
Assembly is done in revers order of disassembly.

RELATED OPERATION

- Front wheel removal / installation (⇨10-2)

	OPERATION / PART NAME	NUMBER	REMARK
	Disassembly		
1	Brake hose bolt	1	
2	Sealing washer	2	
3	Brake calliper Ass'y	1	
4	Flange bolt 8 ×20	2	

MASTER CYLINDER REMOVAL / INSTALLATION



CAUTION

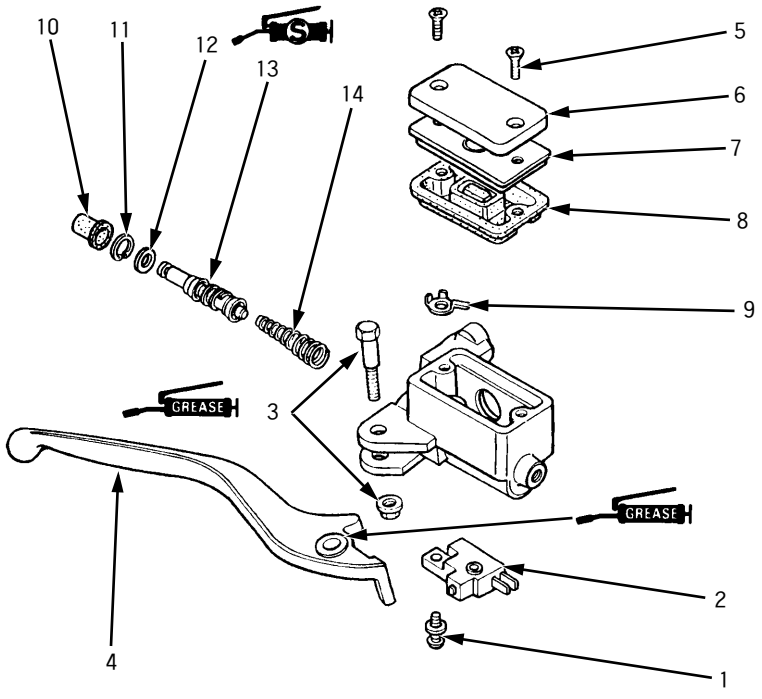
Assembly is done in reverse order of disassembly.

RELATED OPERATION

- Handle cover removal/ installation (⇨2-7)

	OPERATION / PART NAME	NUMBER	REMARK
	Assembly		
1	Brake switch connector	2	
2	Brake hose bolt	1	CAUTION Wind cloth around hose in order to prevent liquid from leaking.
3	Sealing washer	2	
4	Master cylinder bolt	2	CAUTION Tighten the above bolt first during assembly.
5	Master cylinder holder	1	CAUTION Tighten it so that "UP" mark may be oriented up ward during assembly.
6	Master cylinder	1	CAUTION Adjust the adjusting surface of master cylinder and holder at punch mark above handle bar.

MASTER CYLINDER DISASSEMBLY / ASSEMBLY



CAUTION

Assembly is done in reverse order of disassembly.

RELATED OPERATION

- Master cylinder removal/ installation (⇨12-4)

	OPERATION / PART NAME	NUMBER	REMARK
	Disassembly		
1	Washer screw	1	
2	Stop switch	1	
3	6mm nut/pivot bolt	1/1	
4	Brake lever	1	
5	Plat screw	2	
6	Cap	1	
7	Diaphragm plate	1	
8	Diaphragm	1	
9	Protector	1	
10	Dust boot	1	
11	Circlip	1	
12	Stopper plate	1	disassembly, replace the set.
13	Master piston	1	
14	Spring	1	

13. ELECTRICAL SYSTEM

CAUTION WHEN PERFORMING MAINTENANCE

- The maintenance-free (MF) battery does not require battery acid level inspection. Do not replenish distilled water.
- To charge the battery, remove the battery from the frame, and charge it with its seal-cap closed.
- Unless required in an emergency, do not carry out battery quick-charging.
- Always charge battery based on the current and time specified on top of the battery.
- Use a tester to check the charging status(open voltage).
- Do not replace the battery with a general-type battery.
- There is no need to adjust ignition period because of CDI ignition device, In case ignition period is not suitable, check CDI unit and AC generator, and if it is defective, replace it.
- It is possible to separate starter motor with engine not lowered.

TROUBLESHOOTING

Low power - key turned on

1. Weak battery
   - Low fluid level
   - Low specific gravity
   - Charging system failure
2. Loose battery connection

No power - key turned on

1. Dead battery
   - Low fluid level
   - Low specific gravity
   - Charging system failure
2. Disconnected battery cable
3. Main fuse burned out
4. Faulty ignition switch

Charging system failure

1. Loose, broken, or shorted wire or connection
2. Faulty voltage regulator
3. Faulty rectifier
4. Faulty alternator

No spark at plug

- Poorly connected, broken or shorted wires
  - Between the AC generator and CDI unit
  - Between the CDI unit and ignition coil
  - Between the CDI unit and main switch
  - Between the ignition coil and plug
- Faulty main switch
- Faulty ignition coil
- Faulty CDI unit
- Faulty AC generator
- Faulty pulse generator

Starter motor does not rotate

- Fuse is out
- Battery is in sufficiently
- Damaged main switch
- Damaged front or rear stop switch
- Damaged starter relay
- Connector is connected in correctly or out
- Damage starter motor
- Damage starter switch

Weak rotational power in starter motor (Does not turn over engone)

- Battery is insufficiently charged.
- Incorrect connection of battery terminal cord.
- Damaged starter motor.
- Ground wire is connected incorrectly.
- Brush is not worn.

Starter motor is normal but does not turn engine over

- Engine is malfunctioning so the crank shaft is not rotating.
- Incorrect meshing of gears in starer pinion.

Dim headlight

- Battery discharged
- wiring and switch resistance high

Headlight HI-LO not operating

- Bulb malfunction
- Dimmer switch damaged

Engine problems

- Ignition /circuit
  - Ignition coil damaged
  - wire or connector damaged
  - main switch damaged
- Ignition 2 circuit
  - Ignition coil damaged
  - Spark plug damaged
  - High tension cord damaged
  - Plug cap leak
- Ignition timing
  - AC generator damaged
  - Stator damaged
  - CDI unit damaged

oil indicator light not operating (when there is oil)

- Burned out fuse
- Battery insufficiently charged
- Main switch damaged
- Meter damaged
- Oil level switch damaged

Oil indicator does not turn off (when oil is out)

- Coupler loose
- Harness disconnected
- Oil level switch damaged
- Green/red wire joined

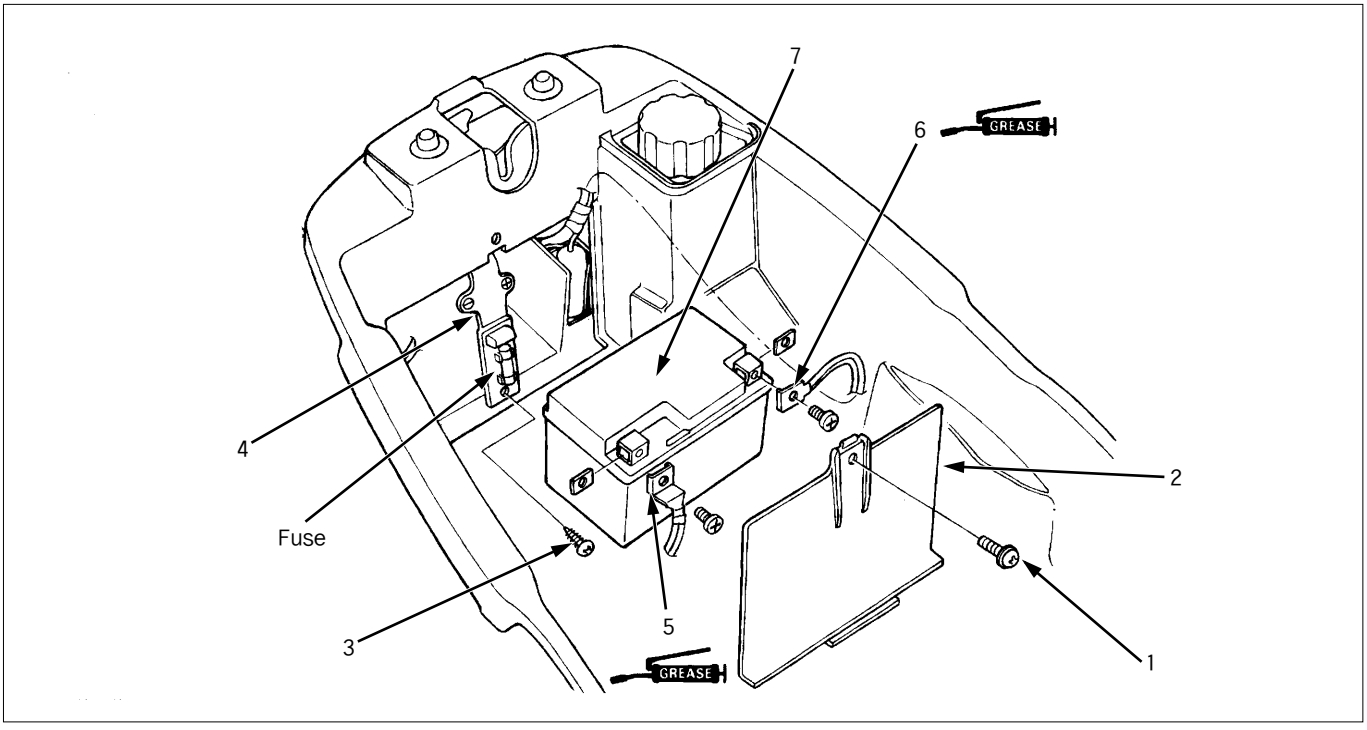
Fuel meter indicator malfunctioning

- Coupler separated
- Harness disconnected
- Float operation malfunction
- Fuel unit damaged
- Meter damaged

Fuel meter needle unstable

- Coupler loose
- Fuel unit damaged
- Meter damaged

BATTERY REMOVAL / INSTALLATION



CAUTION

Assembly is done in reverse order of disassembly.

RELATED OPERATION

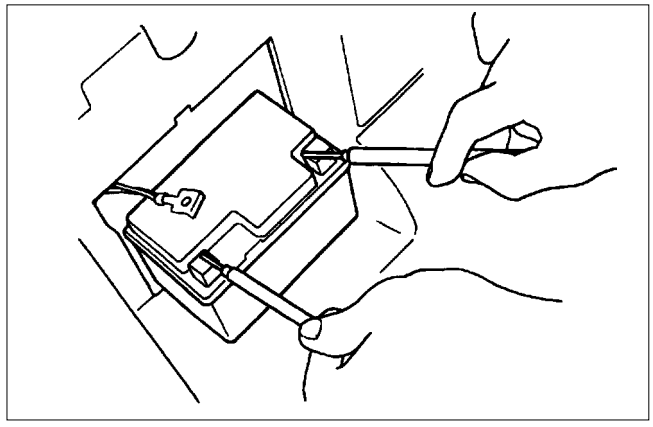
• loosen the seat lock and open seat.

	OPERATION / PART NAME	NUMBER	REMARK
	Assembly		
1	Washer screw	1	
2	Battery cover	1	
3	Battery holder bolt	1	
4	Battery holder	1	
5	Battery ⊖ terminal	1	CAUTION Remove the charger ⊖ cable to the battery ⊖ terminal first, then Remove the charger ⊕ cable to the battery ⊕ terminal.
6	Battery ⊕ terminal	1	
7	Battery	1	
	Assembly		
	7 ⇨ 1		
6	Battery ⊕ terminal	1	CAUTION connect the charge ⊕ cable to the battery ⊕ terminal first, then connect the charger ⊖ cable to the battery ⊖ terminal.

CHARGE LEVEL (OPEN-CIRCUIT VOLTAGE) INSPECTION

- loosen the seat lock and remove the seat.
- Remove the battery holder.
- Remove the battery terminal from the battery.
- Measure the voltage between the battery terminals
  - Fully charged : 13.0~13.2v
  - Insufficiently charged : under 12.3v

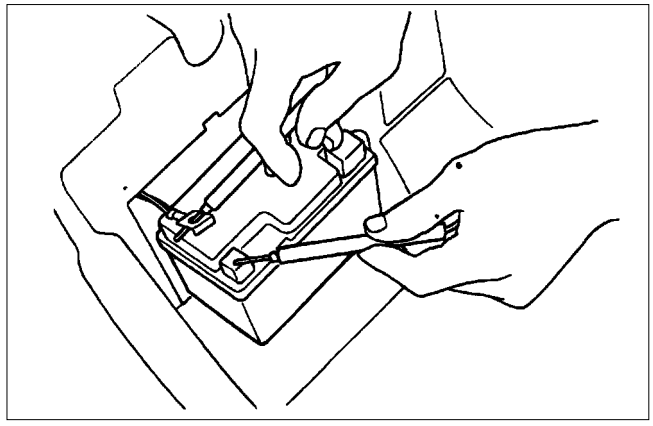
use a digital volt meter when measuring charge level.



CHARGING SYSTEM INSPECTION

LEAKAGE TEST

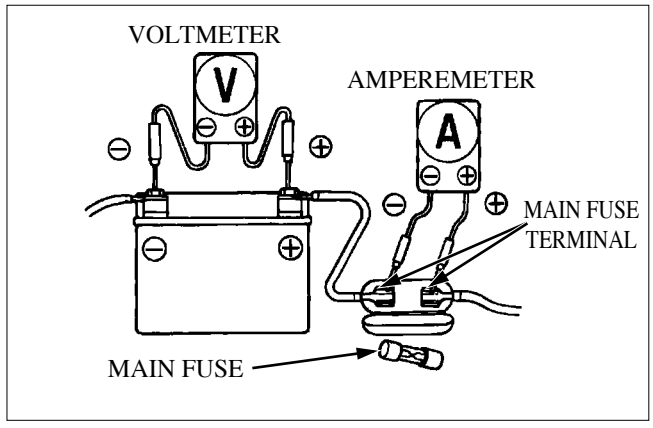
After turing the main switch off and take off the earth-cable from the battery, connect the amperemeter between the battery terminals with earth-cables. Measure the current voltage when main switch off.



CAUTION

- Amperage should be measured with the amperemeter alternating from a large sphere to a small sphere. When a current larger then the upper limit sphere is measured, it is possible to burn out the fuse in the amperemeter.
- Do not turn the main switch ON when measuring current.

Leakage : Under 1mA



INSPECTION OF CHARGE LEVEL

CAUTION

- As the size of the current changes according to the charged state of the battery in this inspection, make sure that the battery is fully charged 13.0-13.2V when inspecting.
- When staring the engine using the starter motor, much current flows as battery power is consumed in the staring of the vehicle.

Assemble the battery to the vehicle after the engine is heated.

Connect a voltmeter to the battery terminals.

DIGITAL MULTIMETER

Connect an amperemeter to the main fuse.

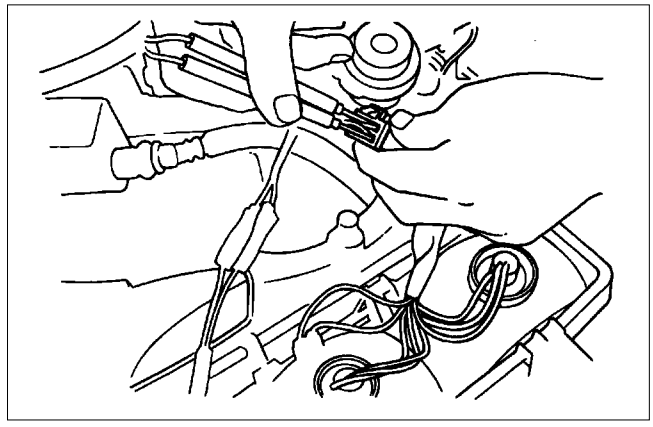
Start the engine, slowly increase engine rpms and measure charge voltage and current.

- Leakage current : 0-0.14A / 5.000rpm

Control voltage(charge) : 13.5-15.0V / 5.000rpm

(Lamp) : 12.0-14.0V / 5.000rpm

LIGHTING SYSTEM CONTROL VOLTAGE INSPECTION



- Remove the handle cover. (⇨2-7)

CAUTION

Leave the headlight coupler connected.

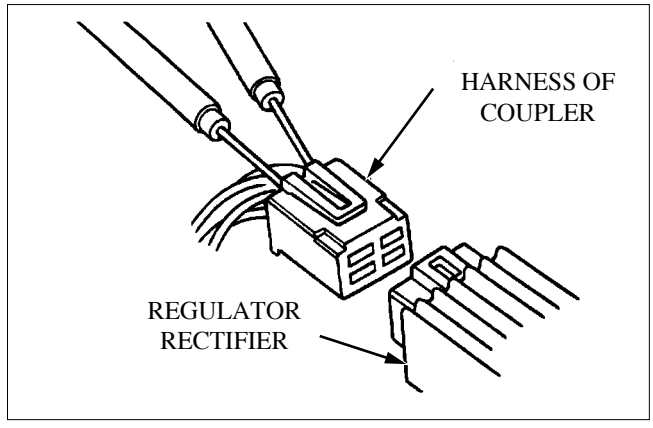
- After staring the engine, place the dimmer switch to Hi and check the voltage between the blue(+) and green(-)wires on the headlight coupler.

CAUTION

Measurement is performed in AC area.

Analogue type : 12.0~14.0/5,000rpm
Digital type : 10.0~13.0/5,000rpm

REGULATOR RECTIFIER INSPECTION



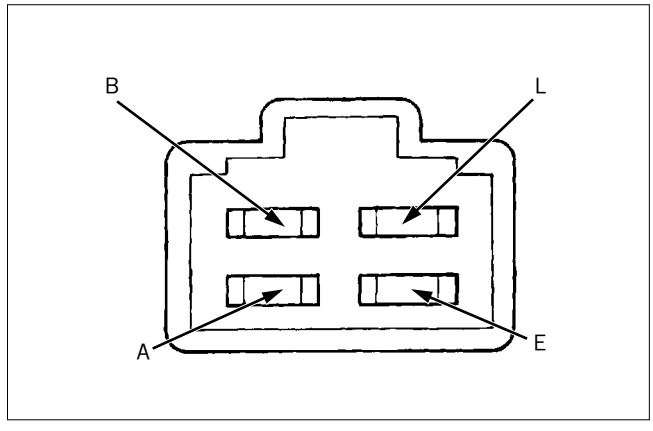
- Remove the 4p coupler of the regulator rectifier and inspect the wiring circuit in the main harness side terminal.

ITEM	MEASUREMENT LOCATION	LEVEL	AREAS OF INSPECTION IF IN CORRECT
BATTERY WIRE	Voltage between red ⊕ green ⊖	There must be battery voltage	Damaged, disconnected main fuse/ harness
CHARGING COIL	✻Resistance between white wire and earth wires. Disconnect the bystarter	0.1-2Ω	AC generator(charging, lighting coil, coupler connection damage) register(6.7Ω 5W), (5.9Ω 30W) headlight lighting circuit
LIGHTING COIL	✻Resistance between yellow wire and earth wires, Disconnect dimmer switch connection	0.1-2Ω	

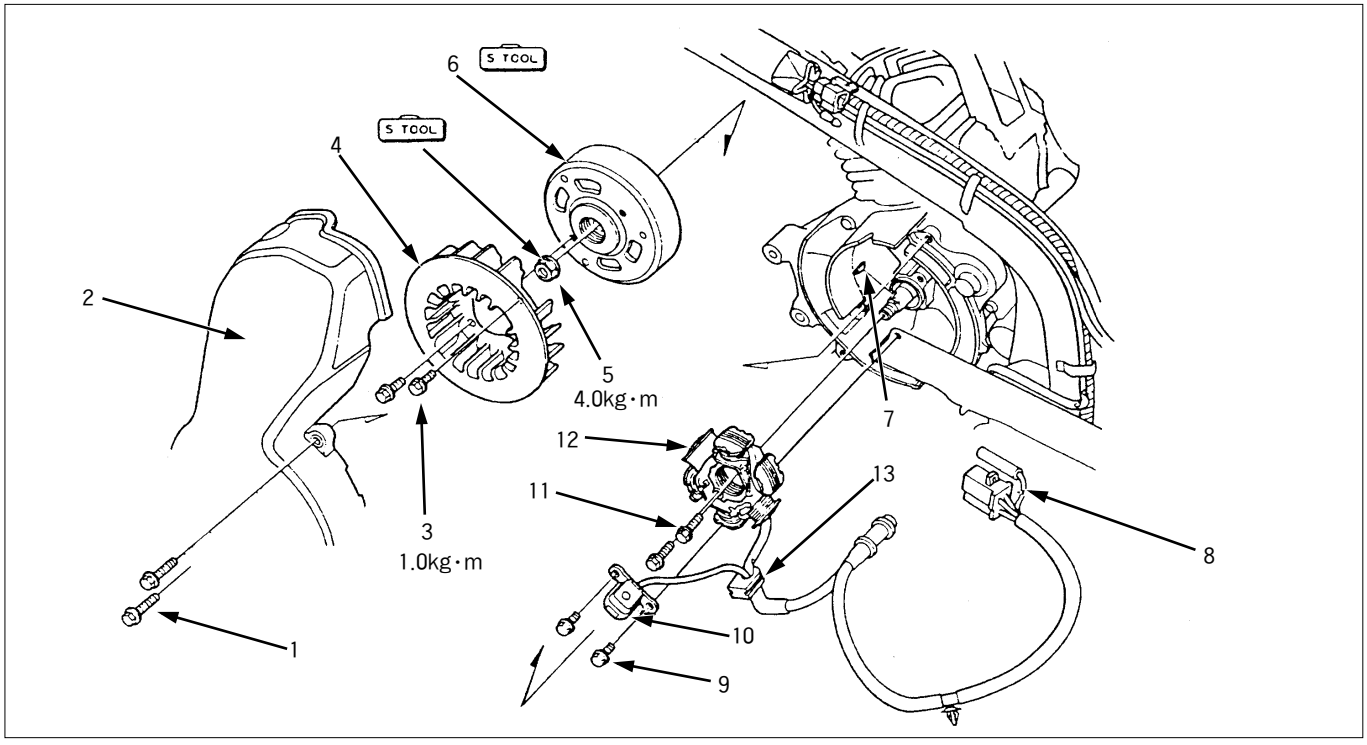
✻ Inspect ※ Part after at least 10minutes later.

Resistance value unit : KΩ

	A	L	B	E
A		○○	3-50	○○
L	○○		○○	5-100
B	○○	○○		○○
E	○○	5-100	○○	



AC GENERATOR REMOVAL / INSTALLATION



CAUTION

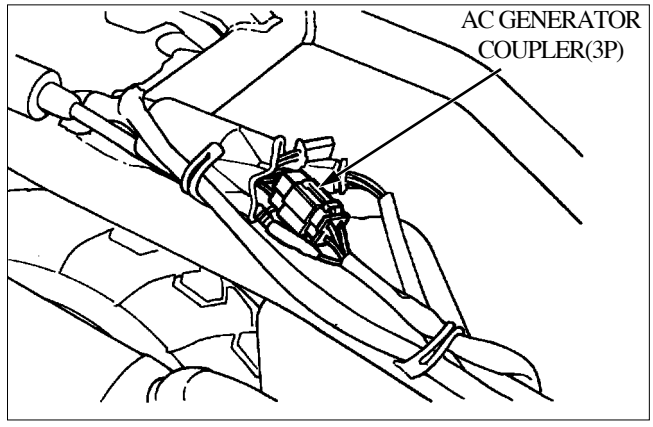
Assembly is done in reverse order of disassembly.

RELATED OPERATION

- Rear frame body cover removal/installation.
- Muffler removal/installation.

	OPERATION / PART NAME	NUMBER	REMARK
	Assembly		
1	Pan cover bolt	2	
2	Pan cover	1	
3	Bolt	2	
4	Cooling pan	1	
5	Fly wheel nut	1	
6	Fly wheel	1	
7	Woodruffkey	1	
8	Couplers	1	CAUTION Remove the connector.
9	Pulse generator assembly bolt	2	
10	Pulse generator	1	
11	Stator assembly bolt	2	
12	Stator	1	
13	Grommet	1	

AC GENERATOR(CHARGING COIL) INSPECTION



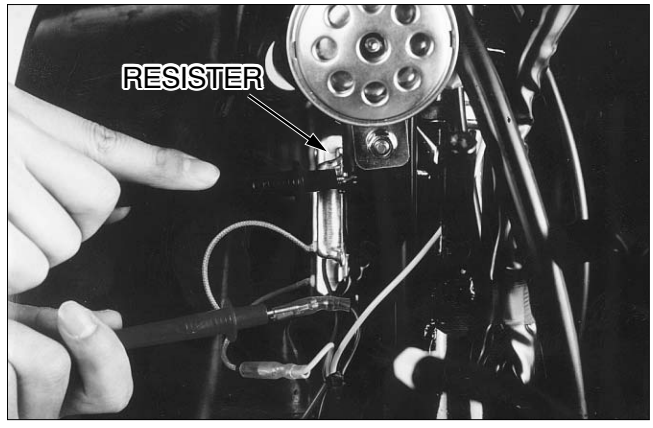
CAUTION

This test is done with the stator mounted to the engine.

- Remove the body cover. (⇨ 2-5)
- Remove the AC generator coupler.
- Measure the resistance of the charging coil. (between the white wire and ground)and the lighting coil. (between the yellow wire and ground)

Standard value(20℃)
Between white wire and ground : 0.3~1.2Ω
Between yellow wire and ground : 0.1~1.0Ω

RESISTER INSPECTION



- Remove the front under cover.
- Measure the resistance between the resistance lead wire and ground.

Standard value(20℃)
Resister(6.7Ω 5W) Green Black-body ground : 6.3~7.1Ω
Resister(5.9Ω 30W) Pink-body ground : 5.6~6.2Ω

CAUTION

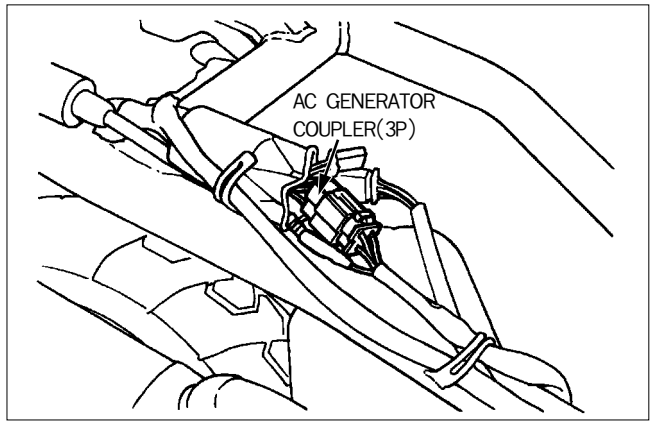
Problems with the resister are caused by operation problems of Auto bystarter.

CDI UNIT INSPECTION SYSTEM

- Remove the Luggage box.
- Remove the body cover.
- Remove the 6p coupler from CDI unit.

ITEM	MEASUREMENT LOCATION	STANDARD
Pulse generator	Blue/Yellow-Green	50 - 200 Ω
Ignition coil (1) (2)	 Black / Yellow-Green Green-Hight tension cord (Connection plug cap) (No plug cap)	 0.1 - 0.3 Ω (20℃) 7.5 - 8.6K Ω (20℃) 2.7 - 3.5K Ω (20℃)

EXCITE COIL, PULSE GENERATOR INSPECTION



CAUTION

This test should be performed with stator assembled to engine.

- Remove the Luggage box.
- Remove the 3P coupler of AC generator.
- Measure the pulse generator of coil from between Blue/Yellow and Ground.

Standard resistance(20°C) : 50~200Ω

- AC generator removal/installation (⇨13-6)

IGNITION TIMING INSPECTION

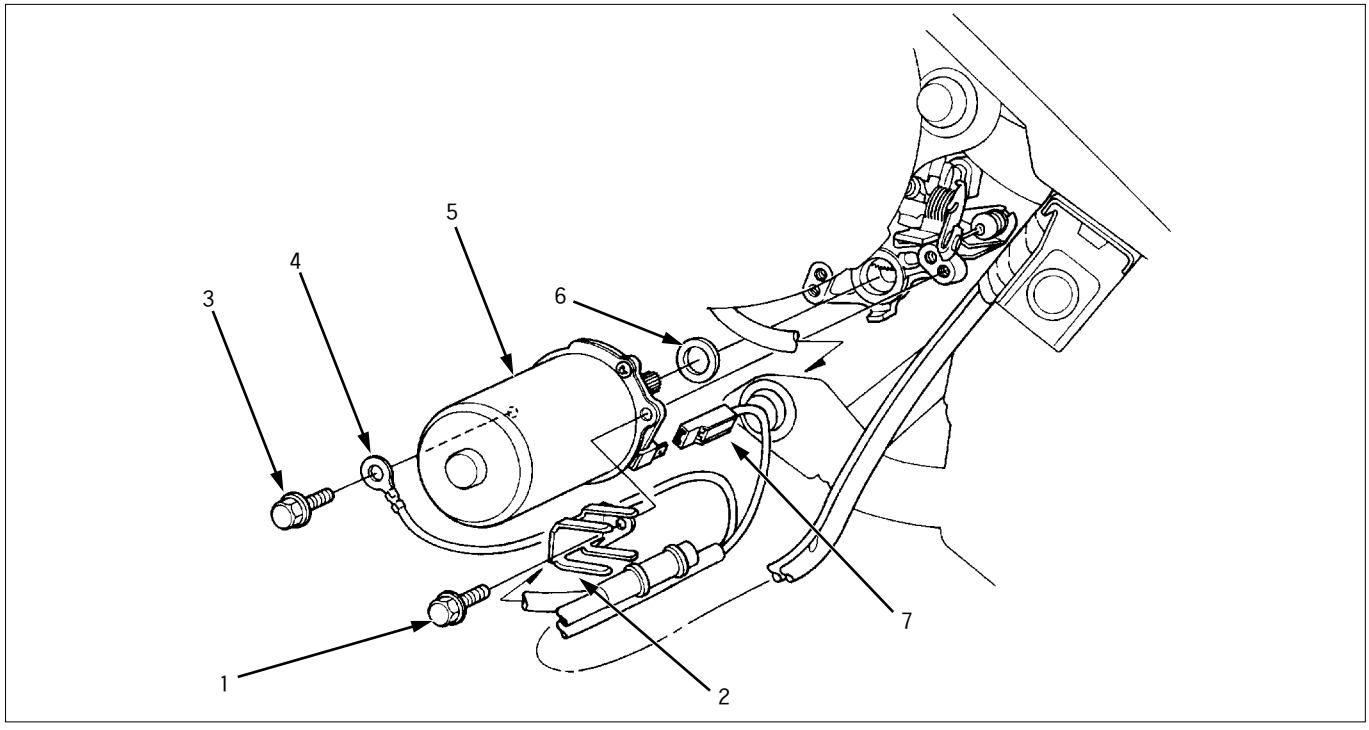
CAUTION

As a CDI device is used in this vehicle, there is no need for adjusting ignition timing. If ignition timing problems occur, inspect the CDI unit and the AC generator and replace if any malfunctions are found in the devices.

- After warming up the engine rpms are at 3,200, Ignition timing is correct if the " F " mark and cooling pan bolt of center between ±3°

IGNITION TIMING : BTDC 17°/1,800 rpm

STARTER MOTOR REMOVAL / INSTALLATION

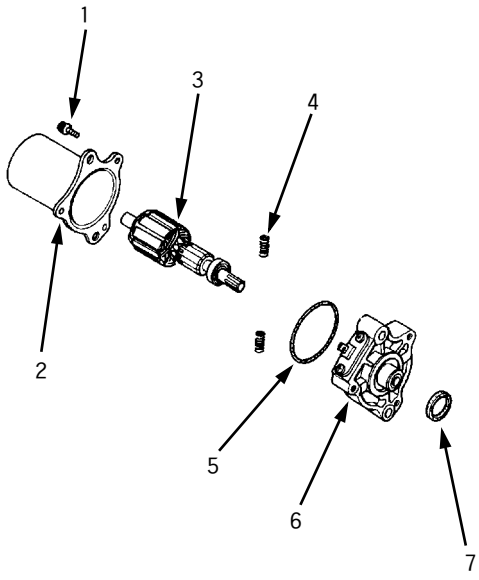


CAUTION

Assembly is dome in reverse order of disassembly.

	OPERATION / PART NAME	NUMBER	REMARK
	Disassembly		
1	Cable clamp assembly bolt	1	CAUTION A combined starter motor bolt.
2	Clamp	1	
3	Starter motor assembly bolt	1	CAUTION Tighten with the ground wire
4	Earth cable	1	disassembly. (⇨13-10)
5	Starter motor	1	
6	Gasket	1	
7	Starter cable connect	1	

STARTER MOTOR DISSEMBLY / ASSEMBLY



RELATED OPERATIONS

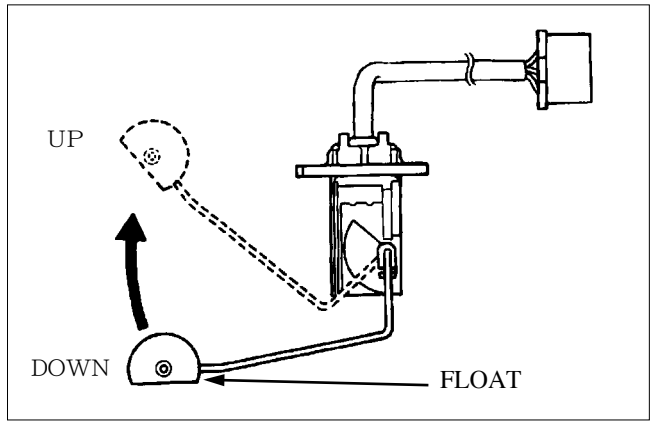
- Starter motor removal(⇨13-9)

	OPERATION / PART NAME	NUMBER	REMARK
	Disassembly		
1	Screw	3	
2	Case	1	
3	Armature	1	
4	Spring	2	
5	Packing	1	
6	Front bracket	1	
7	Gasket	1	
	Assemble		
2	Case	1	CAUTION Be careful no to allow screws or foreign substance enter the case.

FUEL UNIT INSPECTION

- Remove the fuel unit. (⇨ 4-6)
- Move the float to the farthest extreme up and measure the resistance values at each terminal.

WIRE TERMINAL	FLOAT UPPER LINE	FLOAT LOWER LINE
Green and Yellow/White	25 - 41 Ω	500 - 800 Ω
Green and Blue/White	400 - 700 Ω	100 - 200 Ω
White and Blue/White	450 - 750 Ω	450 - 750 Ω

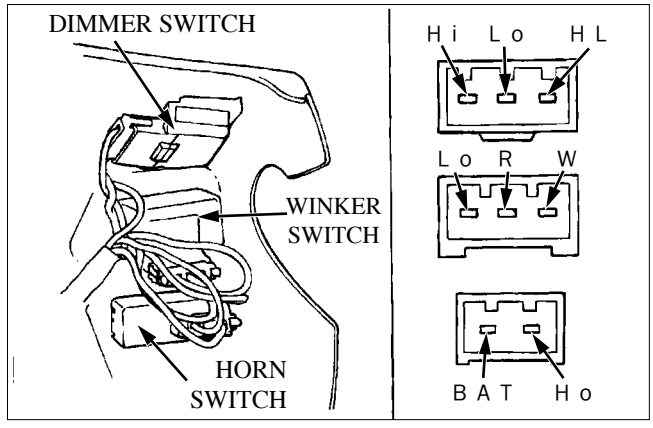


MAIN SWITCH INSPECTION

- Remove the front cover. (⇨ 2-7)
- Remove the main switch wear and inspect continuity of each terminal while referring to the wire diagram.

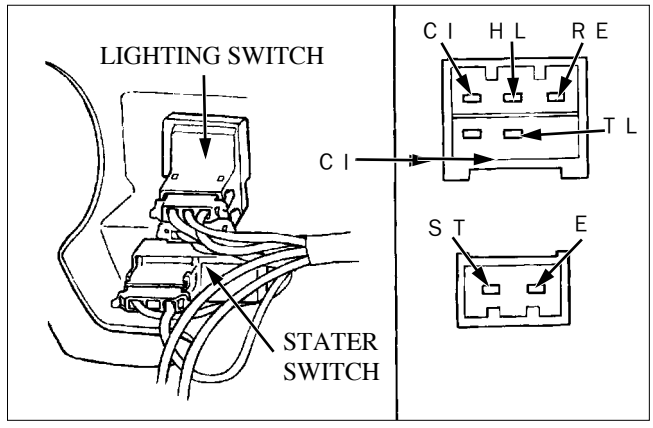
REPLACE MENT

- Remove the front handle cover. (⇨2-7)
- Disconnect the main switch coupler.
- Remove the two screws and remove the main switch.
- Assembly is done in the reverse order of disassembly.



HANDLE SWITCH INSPECTION

- Remove the handle cover. (⇨2-7)
- Remove the handle switch of coupler, connect inspect between the terminal of an electric current.



BULBS REPLACING

HEAD LIGHT BULB

- Remove the headlight maintenance Lid.
- Push down on the bulb socket and turn on the left. Replace with new blub.

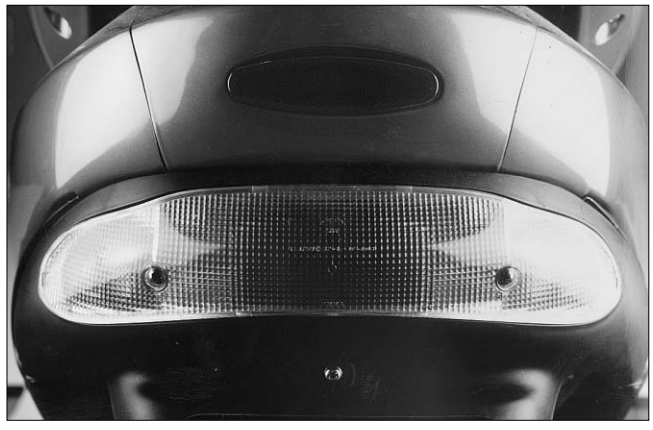
METER BULB

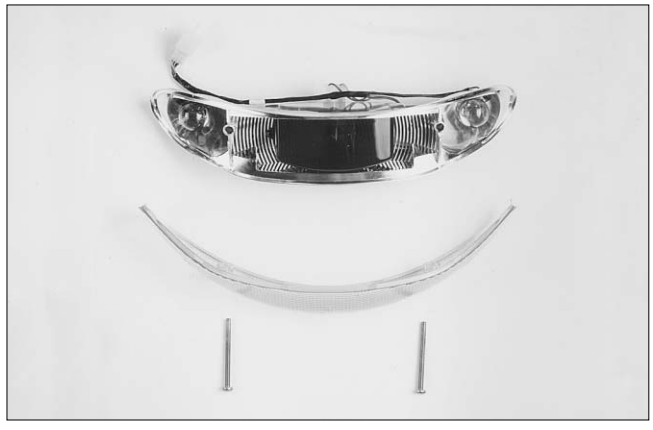
- Remove the bulb socket. replace with New bulb.

TAIL LIGHT BULB

- Loosen the two pan screw and remove the taillight lens. (⇨ 2-4)
- Loosen the two screw and, remove the rear taillight cover R. L. and rear winker lens.
- Remove the tail stoplight bulb, rear winker bulb. Replace with new bulb.

Remove the taillight lens, pay attention to the taillight lens and winker lens of broken.



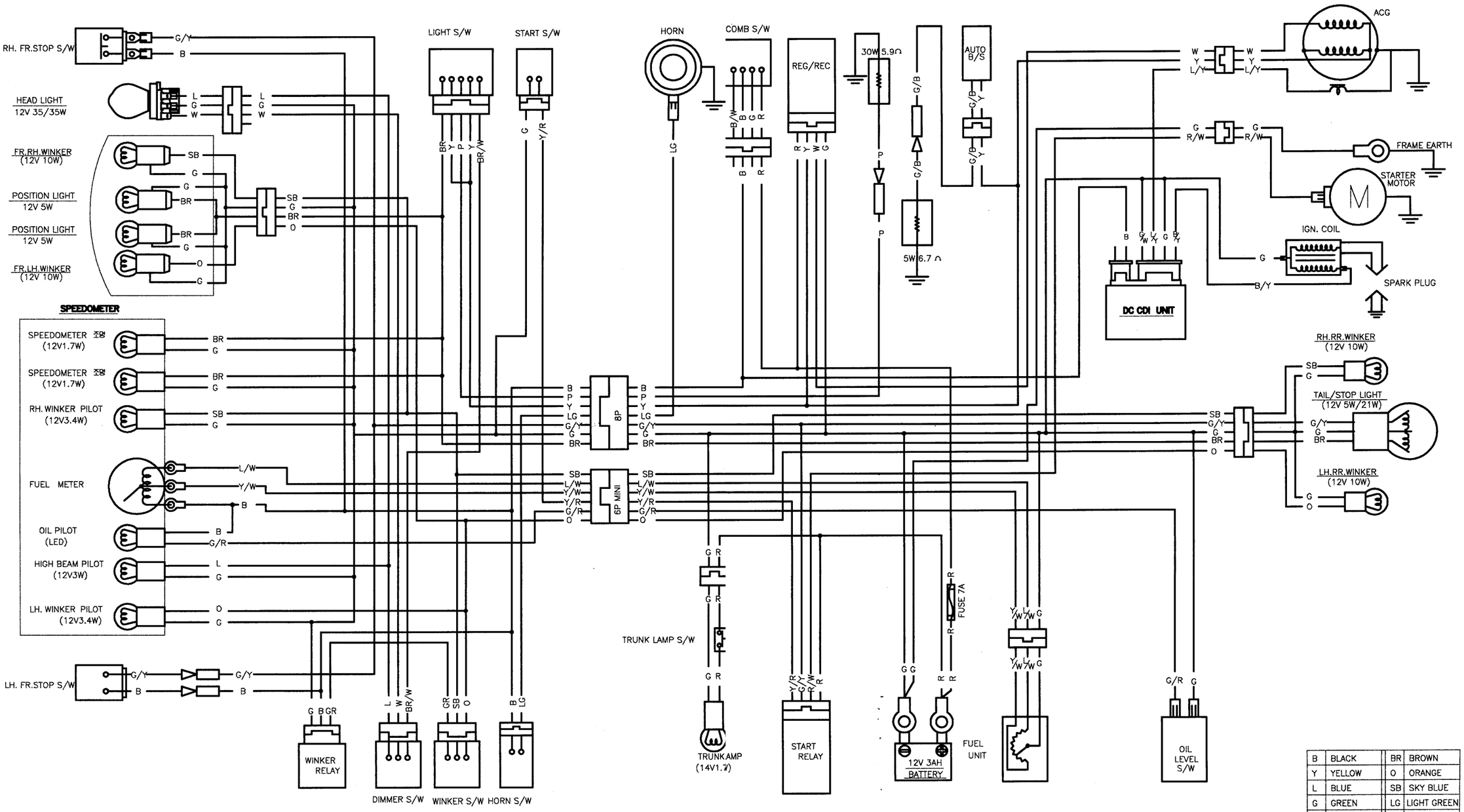


TRUNK LAMP

- Replace the bulb.
- Remove the luggage box. (⇨2-5)
- Replace the trunk lamp bulb socket of luggage.

COLOR	GREEN	RED
TERMINAL	G	R
PUSH		
PRO JECTION	○	○

14. WIRE DIAGRAM



LIGHT S/W

	HL	C1	TL	RE
OFF		○		○
ON		○	○	
(N)		○	○	
Pb		○	○	
(N)	○	○	○	
H	○	○	○	
CORD COLOR	BR/W	Y	BR	P

START S/W

	ST	E
FREE		
PUSH	○	○
CORD COLOR	Y/R	G

DIMMER S/W

	HL	H1	LO
HI	○	○	
N	○	○	○
LO	○		○
CORD COLOR	BR/W	L	W

WINKER S/W

	W	R	L
R	○	○	
PUSH (N)			
N			
L	○		○
CORD COLOR	GR	SB	O

HORN S/W

	HO	BAT
FREE		
PUSH	○	○
CORD COLOR	LG	B

COMB S/W

	IG	E	BA1	BA2
ON			○	○
OFF	○	○		
LOCK	○	○		
CORD COLOR	B/W	G	R	B

B	BLACK	BR	BROWN
Y	YELLOW	O	ORANGE
L	BLUE	SB	SKY BLUE
G	GREEN	LG	LIGHT GREEN
R	RED	P	PINK
W	WHITE	GR	GRAY
COLOR COMB GROUND/MARK NG			

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SM39-0102-01E